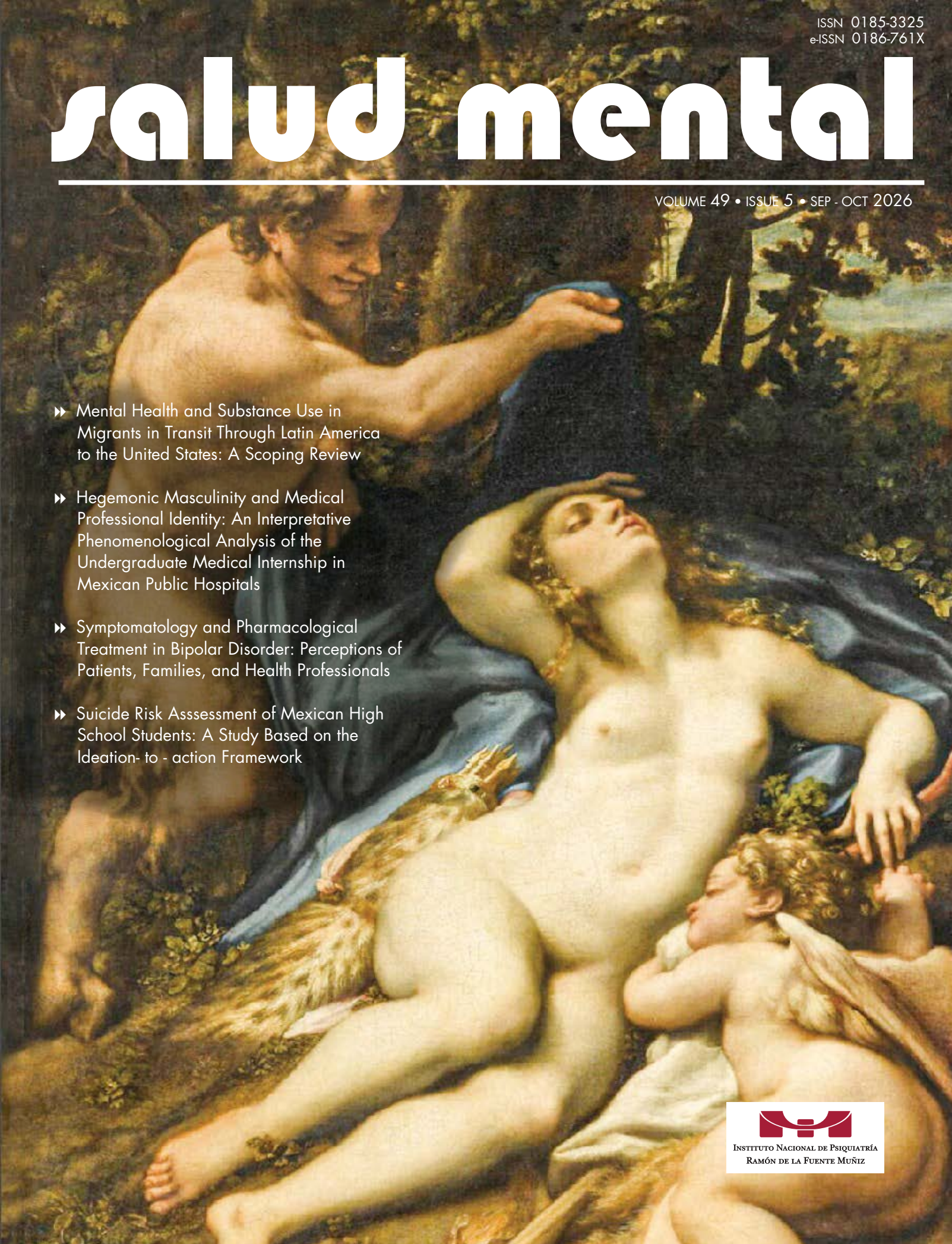
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- Mental Health and Substance Use in Migrants in Transit Through Latin America to the United States: A Scoping Review
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Jupiter and Antiope, c. 1523
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EDITORIAL
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Disenfranchised Grief: Mexico's Unmet Mental Health Needs Following Miscarriage

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INTRODUCTION

Although recognition of postpartum depression in Mexico has increased, it falls short of the adequate standards of care for mothers mandated in NOM-007-SSA2-2016. These official Mexican guidelines establish general regulations for obstetric care, which must be provided with quality and compassion, facilitating psychological support during its course as far as possible. However, they fail to mention the procedures or steps to follow for managing pregnancy loss after a miscarriage.

The aim of this brief review is to draw attention to the psychological consequences of a miscarriage, beyond physical aspects such as bleeding and infections, as a mental health problem requiring full recognition in Mexico.

Miscarriage is defined as the loss of a pregnancy before fetal viability. It is estimated that 23 million miscarriages occur worldwide every year. The cumulative risk of spontaneous abortion for all recognized pregnancies is 15.3% (95% CI: 12.5–18.7%) (Quenby et al., 2021). The prevalence in Mexico is 7% to 11% in pregnancies with fewer than 37 weeks of gestation and 3% to 4% in those with fewer than 34 (Instituto Nacional de Perinatología, 2020).

For most women, the loss of a child during pregnancy is devastating. It is not merely a physical complication, but a profound loss that can trigger clinical depression, severe grief, and post-traumatic stress disorder (Nalugo et al., 2026). Between 20 and 55% suffer from depression, and between 40 and 45% from anxiety (Brier, 2004). Mothers also experience feelings of guilt, as they often attribute the loss to their own actions, or physical or psychological weakness (Nalugo et al., 2026).

Miscarriage also results in a complex sociological and emotional phenomenon known as disenfranchised grief in the literature (Doka, 2002). Society often minimizes miscarriage through narratives that invalidate the experience of grief. For example, the mother is told that she is still young, that she can get pregnant again, that everything happens for a reason, or that it was too early to feel a bond (Nalugo et al., 2026). In the absence of social recognition or public mourning rituals, the mother is denied the right to experience her loss, undergoing her grief in complete isolation.

Despite gaps in the regulatory framework in Mexico, perinatal grief is beginning to be addressed through operational guidelines and hospital protocols focusing on humanized care to mitigate psychological trauma. The Butterfly Code of the Instituto Mexicano del Seguro Social (IMSS, 2023) has been implemented in various health networks, training clinical staff to afford empathic care, offer private, designated spaces for grieving parents away from newborns, and provide specialized psychological follow-up.

The Guidelines for Humanized Care in Pregnancy, Childbirth and Postpartum, technical documents issued by the Centro Nacional de Equidad de Género y Salud Reproductiva (CNEGSSR, 2022), advocate for emotional support, respect for the patient's time, and non-separation of family members during events of loss.

The proposed care options can be summarized as follows:

1. Systematic screening in emergency or obstetric wards, using tests validated in Mexico, such as the Whooley and Arroll questionnaire (Navarrete et al., 2018).
2. Psychoeducational interventions and reframing of guilt, adapting the cognitive restructuring modules of postpartum depression for managing guilt (Kersting & Wagner, 2012; Lara, 2023).
3. Support groups focused on perinatal grief, designed to create spaces between peers based on the mutual support methodology for the reconstruction of grief and the validation of pain (Markin & Zilcha-Mano, 2018).

Overcoming institutional inertia requires restructuring the clinical approach to adequately address disenfranchised grief in response to early pregnancy loss.

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Mental Health and Substance Use in Migrants in Transit through Latin America to the United States: A Scoping Review

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ABSTRACT

Introduction. Many migrants in transit are forced to travel through several countries before reaching their destination. International studies have shown that crossing one or more international borders poses major challenges, which in turn can constitute a risk factor for developing mental disorders. **Objective.** To identify and describe the evidence on mental health and substance use among migrants in transit through Latin America to the United States. **Method.** A scoping review was conducted, searching PubMed, EBSCO, SAGE and Scielo for studies published in English, Portuguese or Spanish from 2018 to 2024. **Results.** Two hundred and seventy-nine articles were found, ten of which were analyzed. Study participants were from Honduras, Guatemala, El Salvador, Nicaragua, Venezuela, Haiti and Cuba, and were all in transit through Mexico. The mental health disorders reported included anxiety, depression, and psychological distress. Higher numbers of journey attempts and having relatives in the United States were associated with a greater likelihood of alcohol dependence and abuse. **Discussion and conclusion.** The mental health of migrants in transit has scarcely been studied. It is influenced by economic precariousness, violence and uncertainty about the future, which must be explored in greater depth to contribute to the design and implementation of policies and programs.

Keywords: Migrants in transit, substance use disorders, mental health, Latin America, United States.

RESUMEN

Introducción. Los migrantes en tránsito son migrantes que en su mayoría atraviesan varios países antes de llegar a su destino. Los estudios internacionales muestran que el viaje a través de una o más fronteras internacionales plantea grandes retos. Éstos pueden ser factores de riesgo para desarrollar trastornos mentales. **Objetivo.** Identificar y describir la evidencia sobre salud mental y consumo de sustancias entre migrantes en tránsito por América Latina hacia Estados Unidos. **Método.** Se realizó una revisión de alcance. Se buscaron estudios publicados en inglés, portugués o español entre 2018 y 2024 en las bases de datos PubMed, EBSCO, SAGE y Scielo. **Resultados.** Se encontraron 279 artículos, se analizaron 10 artículos. Los participantes eran de Honduras, Guatemala, El Salvador, Nicaragua, Venezuela, Haití y Cuba, todos cruzaban por México. Los trastornos de salud mental fueron ansiedad, depresión y malestar psicológico. El número de intentos de viaje y tener familia en Estados Unidos se asociaron con una mayor probabilidad de dependencia y abuso del alcohol. **Discusión y conclusión.** La salud mental de los migrantes en tránsito ha sido escasamente estudiada. En ella influyen la precariedad económica, la violencia y la incertidumbre sobre el futuro. Es necesario profundizar en estas experiencias para contribuir al diseño e implementación de políticas y programas.

Palabras clave: Migrantes en tránsito, trastornos relacionados con uso de sustancias, salud mental, América Latina, Estados Unidos.

INTRODUCTION

According to the World Migration Report, there were 281 million international migrants in 2020, meaning that 3.6% of the world´s population live outside their country of origin, 108 million more than in 2000. Fifteen years ago, there were seven million international migrants from Latin America and the Caribbean, a figure that has since risen to 15 million. The number of migrants transiting through South and Central America to the United States has also increased (McAuliffe & Oucho, 2024). The main international migration destination is the United States while the largest migration corridor to that country is in Mexico, with nearly 11 million people in transit (McAuliffe & Triandafyllidou, 2022).

Migrants from Central and South America must travel through several countries before arriving in the United States. International studies have shown that crossing one or more international borders to reach the final destination poses major challenges since migrants in transit (MIT) must often take dangerous routes to avoid detention, facing discrimination, violence, torture, kidnapping, human trafficking, enforced disappearance, and other life-threatening experiences (Ben Farhat et al., 2018; Gargano et al., 2022; Guarch-Rubio et al., 2021).

Migration through Latin America to the United States is driven by social vulnerability characterized by conflicts, violence, poverty, and unemployment (Hernández Alvarado et al., 2022; Santana-Hernández, 2005). The history of migration in Latin and Central America occurred in stages. In the beginning, it was due to armed conflicts in the 80s, particularly in Cuba and Nicaragua, triggering the first wave of migration in the region. In 1990, it was caused by economic factors when the social and political climate stabilized. Migration is currently caused by the violent social conditions and climate of adversity prevailing in Central and South America (Aruj, 2008; Reichman, 2015).

Social conditions in sending countries and the tightening of migrant reception policies in the United States (such as the Migrant Protection Protocols) suggest that nations that were previously crossing points will become mandatory destinations for MIT. For example, Mexico is becoming a destination country for international migrants: between 2000 and 2020 the immigrant population increased by 123%. Likewise, the number of migrants in an irregular situation through Mexico has increased significantly, from 131,445 in 2018 to 782,176 in 2023 (Organización Internacional de las Migraciones, 2023). This migratory situation creates new needs for diagnosis and care.

Evidence suggests that MIT who either cross Mexico or reach the U.S.-Mexico border have experienced more traumatic experiences than the general population and when they manage to cross the border, they have mental and behavioral disorders, such as post-traumatic stress, major depressive episodes, anxiety, and stress (Infante-Xibille et al., 2015; Venta, 2019).

According to an umbrella review conducted by the World Health Organization, challenging situations associated with migration constitute a risk factor for developing mental disorders. These include exposure to adversity and potentially traumatic events as well as the lack of security and difficulty covering basic needs (World Health Organization, 2023). However, this review did not provide specific information on mental health issues in MIT.

Despite the growing global attention to the mental health of migrant populations, the specific challenges faced by migrants in transit (MIT) remain understudied. While extensive research has focused on the mental health of settled refugees and asylum seekers, especially in Europe, North America, and Australia, far less is known about those who are still in transit—individuals navigating prolonged journeys, often under conditions of extreme vulnerability. The scarcity of evidence is even more marked in the Americas, where the world's largest migratory corridor is located. This knowledge gap hampers the development of effective, context-specific interventions and leaves a critical population without adequate mental health support. Addressing this gap is therefore essential to ensuring a more comprehensive and equitable global response to migration.

Having evidence about the extent to which mental health problems have been explored in migrants in transit in the largest migratory corridor in the world will make it possible to identify information gaps as well as elucidate the needs of this population. This scoping review aims to identify and describe the evidence on mental health and substance use among migrants in transit through Latin America to the United States.

METHOD

This study was conducted using the scoping review methodological recommendations put forward by the Joanna Briggs Institute (JBI) (Aromataris & Munn, 2020) and followed the guidelines of the Preferred Reporting Items for Scoping Reviews (PRISMA-ScR) to guide reporting (Tricco et al., 2018).

Inclusion and exclusion criteria

The inclusion criteria and review question were developed using the Population, Concept, and Context (PCC) framework, as recommended by the JBI methodology for scoping reviews (Aromataris & Munn, 2020). Studies were eligible if they focused on any aspect of mental health among migrants of any age and sex in transit through Latin American countries on their way to the United States. Eligible publications had to be original research articles published in English, Spanish, or Portuguese between January 2018 and May 2024—a timeframe selected due to the documented increase in

irregular migration flows in the region, particularly through Mexico. The search was conducted on June 4, 2024. We included studies employing quantitative, qualitative, or mixed-method designs. Studies were excluded if they focused on migrants who were already residing in the United States or if they were review articles (i.e. narrative or systematic reviews).

Information sources

EBSCO, PubMed, Scielo and SAGE were searched as well as the references in the included studies.

Search strategy

The following terms were used and combined to be used in each database: (Transients and Migrants OR Transmigrant OR Intercepted journey OR Interrupted transit OR Migrants in transit OR Migrants in transit through Mexico OR Migrants in transit thorough Latin America OR Migrant journey OR Migration journey OR Persons in mobility through OR Migrant journey through OR Migratory Transit) AND (Mexico OR Americas OR "South America" OR "America" OR "Latin America" OR "Central America" OR "Migrant Mexico corridor") NOT (Europe NOT Asia NOT Australia NOT Africa) AND (Addictions OR Substance use disorders OR Substance abuse OR illicit drugs OR Designer Drugs OR Psychiatric disorders OR Mental disorders OR Mental health OR Migrants' mental health in transit OR Behavior, Addictive OR Substance-Related Disorders OR illicit drugs OR Designer Drugs OR Mental Disorders OR Mental Health OR Stress Disorders, Post-Traumatic OR Depression OR Anxiety).

Selection of studies

Studies were independently selected by three researchers using a checklist derived from the selection criteria, while disagreements were discussed and resolved by consensus. The process began by reviewing titles to identify duplicate articles and then proceeding to make an initial selection based on the information contained in the abstract. The full text of the preselected articles was subsequently reviewed.

Data extraction

To analyze the information from the included studies, we developed two structured data extraction tables—one for qualitative studies and another for quantitative studies. In the case of mixed-method studies, qualitative and quantitative data were recorded in the respective table. These tools were constructed in keeping with the JBI guidelines developed by Aromataris & Munn (2020), and pilot tested to ensure clarity and understanding.

For the categorization of findings, we adopted an inductive basic qualitative content analysis approach, as recommended by Pollock et al. (2023). This involved an initial phase of open coding, where relevant data excerpts were labeled with descriptive codes. These codes were then grouped into higher order categories through iterative team discussions, facilitating the systematic organization of findings. The first level of classification was the methodological design of the studies (qualitative, quantitative, or mixed method), followed by thematic categories derived from the coded content.

RESULTS

Two hundred and seventy-nine articles were identified, 27 duplicate records were removed, and 243 records were removed following a review of their titles and abstracts. Seven were found to meet the criteria for analysis (Alquisiras Terrones & Zapata Aburto, 2022; Altman et al., 2018; Berenzon-Gorn et al., 2023; Cruz Piñeiro & Ibarra, 2022; Laughon et al., 2023; Rodríguez, 2022; Soria-Escalante et al., 2022) and another three (Cano Collado et al., 2021; Lemus-Way & Johansson, 2020; Silverstein et al., 2021) were identified by checking their references. A total of 10 articles were analyzed (Figure 1).

Characteristics of included studies

Most of the articles were published in 2022 and based on qualitative studies. Two studies included children (Alquisiras Terrones & Zapata Aburto, 2022; Berenzon-Gorn et al., 2023), and two reported the average ages of participants: 29 and 33.5 years respectively (Altman et al., 2018; Laughon et al., 2023). Three articles included women only (Laughon et al., 2023; Lemus-Way & Johansson, 2020; Soria-Escalante et al., 2022); one analyzed data on transgender, gender fluid, gay and non-binary individuals in addition to men and women (Berenzon-Gorn et al., 2023) while the one conducted by Altman et al. only examined data on men (Altman et al., 2018).

In all the studies (Alquisiras Terrones & Zapata Aburto, 2022; Altman et al., 2018; Berenzon-Gorn et al., 2023; Cano Collado et al., 2021; Cruz Piñeiro & Ibarra, 2022; Laughon et al., 2023; Lemus-Way & Johansson, 2020; Rodríguez, 2022; Silverstein et al., 2021; Soria-Escalante et al., 2022), data collection mainly took place in shelters, migrant homes, makeshift camps, public spaces such as cafeterias, benches, the land adjacent to railroad tracks and plazas. One study analyzed the legal declarations and forensic medical affidavits of refugee seekers staying in Mexico (Silverstein et al., 2021). None of the studies were conducted in settings associated with migration authorities or governmental assistance programs.

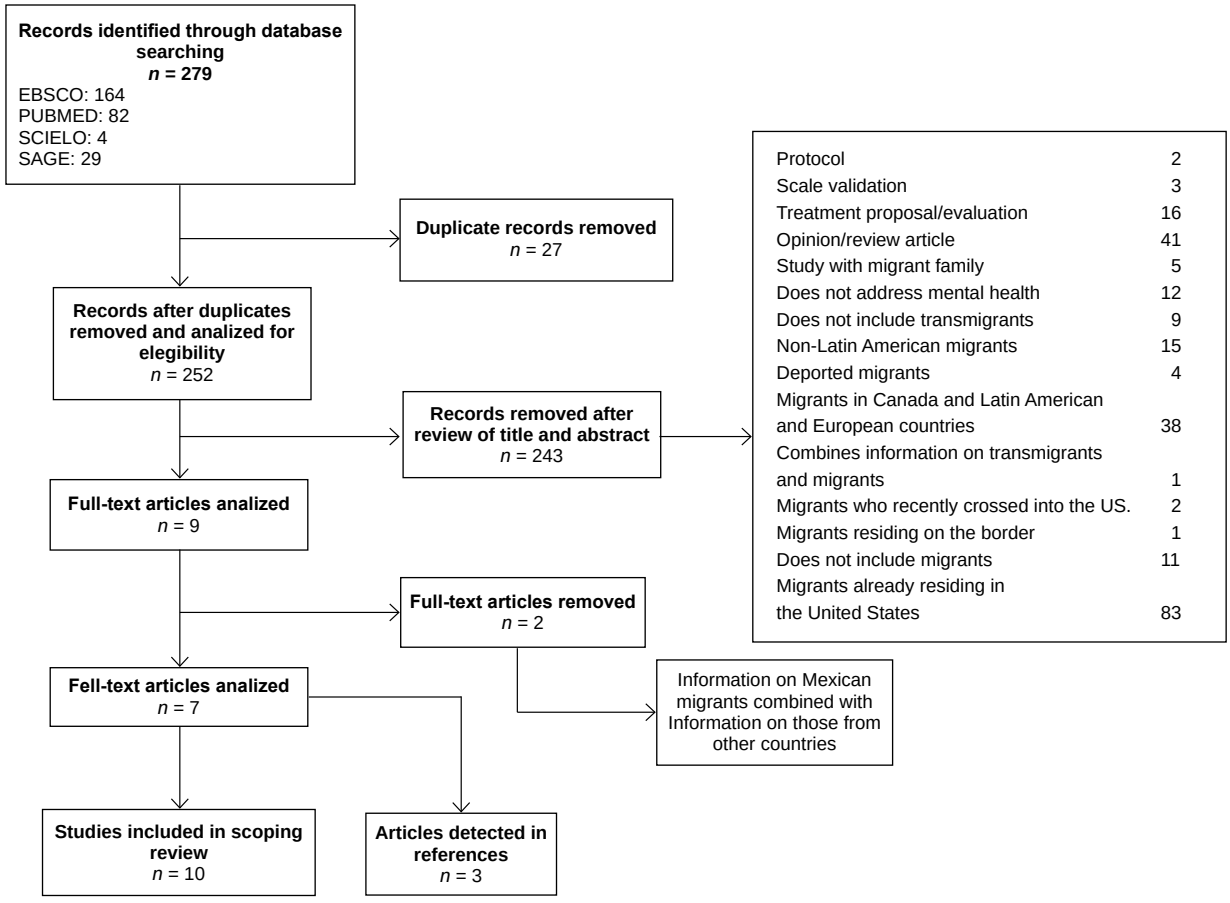


Figure 1. PRISMA Flowchart of the Identification and selection process of studies included in the scoping review of the mental health of migrants in transit through Latin America to the United States.

All the research (Alquisiras Terrones & Zapata Aburto, 2022; Altman et al., 2018; Berenzon-Gorn et al., 2023; Cano Collado et al., 2021; Cruz Piñeiro & Ibarra, 2022; Laughon et al., 2023; Lemus-Way & Johansson, 2020; Rodríguez, 2022; Soria-Escalante et al., 2022), except one (Silverstein et al., 2021), was conducted in Mexico with migrants from Honduras, Guatemala, El Salvador, and to a lesser extent Nicaragua, Venezuela, Haiti, and Cuba. Two qualitative studies (Cruz Piñeiro & Ibarra, 2022; Laughon et al., 2023) included information from three Mexican participants, but because of the quantity and nature of the information they contributed to the subject of this review, it was decided to analyze them.

With respect to ethical guidelines, two studies did not report approval by any ethics committee (Alquisiras Terrones & Zapata Aburto, 2022; Rodríguez, 2022). These two studies also failed to mention the existence of written or verbal informed consent.

Altman et al. were the only authors to report the length of time in transit or the duration of the journeys undertaken (Altman et al., 2018). Three studies reported the time the MIT had been at the interview site or the time that they had spent in Mexico (Berenzon-Gorn et al., 2023; Cruz Piñeiro & Ibarra, 2022; Laughon et al., 2023). The main characteristics together with a summary of their results are given in Tables 1 and 2.

Mental health

The evidence analyzed reveals a complex, multifaceted picture of mental health among migrants in transit through Mexico. Across the studies, a broad range of psychological effects were reported, including anxiety, depression, psychological distress, sadness, anger, hopelessness, constant worry, and trauma-related symptoms. These mental health outcomes appear to be closely related to the precarious, often violent conditions experienced during transit, as well as the prolonged uncertainty surrounding their legal status and future (Alquisiras Terrones & Zapata Aburto, 2022; Altman et al., 2018; Berenzon-Gorn et al., 2023; Cano Collado et al., 2021; Cruz Piñeiro & Ibarra, 2022; Laughon et al., 2023; Lemus-Way & Johansson, 2020; Rodríguez, 2022; Silverstein et al., 2021; Soria-Escalante et al., 2022).

Table 1
Main outcomes of quantitative studies on mental health among migrants in transit through latin america to the United States

Author/year	Aims	Country		Population or sample		Setting	Methodology	Data collection methods	Mental health variables analyzed	Time in transit	Main results
		Origin	Transit	N	Age and sex						
1. Berenzon-Gorn et al., 2023	To explore the relationship between emotional distress and the experience of vulnerabilities in MIT	Honduras, Guatemala, El Salvador and Nicaragua	Mexico	217	Over 90% were between 18 and 44 years old. 43.3% were men; 53.9% women; 2.8% transgender, gender fluid, gay or non-binary	14 Shelters in Mexico City and Tijuana	Mixed-method, descriptive, exploratory study	1. Face-to-face interview on migration trajectory; food insecurity; Patient Health Questionnaire-4, Scale on violence during transit	Cumulative vulnerability and anxiety	57.3% had been in Tijuana for less than three months, 33.2% for six months and 9.5% for over six months	For men, having two vulnerabilities triples the prevalence of anxiety. For women, three or more vulnerabilities triples this prevalence
2. Altman, et al., 2018	To analyze the vulnerability to mental health problems and substance use in male MIT	Honduras (59.50%) and other Central American countries (40.50%)	Mexico	363	Men; mean age: 29 years old	Casas del migrante in Monterrey; Guadalupe and Saltillo	Cross-sectional study	Mini International Neuropsychiatric Interview; questionnaire on health and quality of life, conditions in country of origin, migratory experience	Major depressive disorder, alcohol use and dependence; traumatic experiences; journey experiences	Days of journey to date in Mexico: less than 30: 47.93%; 30–59: 33.33%; more than 60: 18.73%	Nearly 20% had suffered a traumatic experience in their country of origin. 66% had suffered abuse during the trip. 53% had more than one disorder. Disorders affecting more than 10% of the sample included current major depressive episodes (22%), alcohol dependence (13%), current panic disorder (12%) and alcohol abuse (11%). Abuse experiences, migration duration, and migration attempts predicted depression. Alcohol dependence and abuse were associated with having family or friends in the United States. The number of migration attempts predicted alcohol dependence

Table 2
Main findings of qualitative studies on mental health among migrants in transit through Latin America to the United States

Author and year	Aims	Country		Participants		Setting	Data collection technique	Time in transit	Categories of analysis identified
		Origin	Transit	N	Age and sex				
1. Berenzon-Gorn et al., 2023	See Table 1	Honduras, Guatemala, El Salvador, Nicaragua	Mexico	35 (25 Hondurans, 7 Salvadorans, 2 Nicaraguans and 1 Guatemalan)	17 to 70 years old; eight women, 18 men, five transgender, three gay	See Table1	Semi-structured individual interviews: migration trajectory; perceptions of mental health; care needs; service use	Not specified	Depression and worries about material precariousness and lack of food. Increased discomfort when traveling with children. Fear, “nerves,” “psychological trauma” and sadness due to threats, violence and discrimination. Feelings of being trapped, immobilized, stress anger, loneliness, helplessness due to having to wait to continue their trip

Table 2
Main findings of qualitative studies on mental health among migrants in transit through Latin America to the United States (continued)

Author and year	Aims	Country		Participants		Setting	Data collection technique	Time in transit	Categories of analysis identified
		Origin	Transit	N	Age and sex				
2. Laughon et al., 2023*	To describe the health and safety concerns of female asylum seekers living in an informal encampment	Honduras, El Salvador, Guatemala, Ecuador, Mexico	Mexico	43	Women; mean age = 33 years old	Informal encampment Matamoros, Mexico	Semi-structured interviews	Not specified. Mean months in encampment: 2.6	Mothers' fear, anguish and hypervigilance due to the possibility they or their children will be attacked because of lack of security in the encampment. Difficulty sleeping, fear of the night. Suffering due to separation from their children when sending them to the United States. Children's uncontrollable crying, fear, sleeping difficulties, depression and desire to return to their places of origin
3. Rodríguez L. 2022	Not specified. It is inferred that it aims to provide an ethnographic analysis of the experiences of violence of migrants "trapped in mobility"	Mainly Honduras	Mexico	40	Not specified, young people	Public places near the railroad tracks in Veracruz, Mexico	Ethnographic study, interviews and in situ observation	Not specified	Vigilance over migrants, inability to mobilize; a continuum of violence: structural, political, symbolic and daily, which imply self-invisibilization. Stigma, discrimination, resulting in vulnerability. Neglect and mistreatment in childhood. Trauma in their places of origin and in their transit through Mexico. Substance use
4. Alquisiras Terrones & Zapata Aburto, 2022	Not specified. It is inferred that it aims to analyze the process of transformation of subjectivity after a mutilation due to migration	Honduras and Guatemala	Mexico	12 (two Guatemalans and 10 Hondurans)	Two women and 10 men. Two children	Shelters and aid organizations for MIT mutilated by freight train known as "La Bestia"	Ethnographic study, interviews	Not specified	Amputation implies great suffering and the perception that the access to a better life is lost; they have no physical strength to move, work or resist the difficult conditions of migration. They give meaning to their existence and recognize a divine plan for them and realize they have the strength to cope with difficult situations
5. Cruz, et al., 2022*	To describe the impact of COVID-19 restrictions on the mental health and well-being of migrants stranded in Mexico	Honduras, Guatemala, El Salvador, Haití, Nicaragua, Venezuela and Cuba	Mexico	57 Central American and Caribbean immigrants stranded in Mexico due to the COVID-19 pandemic	29 women, 28 men between 19 and 75 years old	Public areas and/or improvised encampments in Tijuana, Juárez, Matamoros and Chiapas	Ethnographic study, face-to-face, in-depth interviews	Not specified	Psychological impact of the pandemic. Uncertainty of being stranded in Mexico and the long wait. Fear of violence due to fear of infection
6. Soria-Escalante, et al., 2022	To explore the sexual violence faced by migrant women and determine how these experiences relate to migratory transit	Latin American women	Mexico (Veracruz, Tabasco, Nuevo León, Tamaulipas)	10 MIT, women with no documents	Women over the age of 18	Migrant shelters in Veracruz, Tabasco, Nuevo León and Tamaulipas	Qualitative–phenomenological method. Semi-structured in-depth interview	Not specified	Differences in vulnerability between men and women. Recognition of contextual factors associated with the migration process: "intermediaries, the road, shelters and sorority." Costs of migration: abuse, discrimination and persecution. God as support to cope with unbearable violence
7. Lemus-Way & Johansson, 2020	To analyze how Central American migrant women in irregular transit through Mexico narrate their strengths and resiliencies	Guatemala, Hondura, El Salvador	Mexico	10 Central American MIT	Women between 23 and 49 years old	One shelter located in Tiuana, Mexico	1) Narrative interviews 2) Microethnographic work	Not specified	Participants suffered violence, discrimination, human rights violations and threats to their lives. Feelings of helplessness. Migrant women have both internal (religion, spirituality, endurance, goal setting, and courage) and external strengths (institutional resources, family, and relatives) which helped them reach the U.S. border

Table 2
Main findings of qualitative studies on mental health among migrants in transit through Latin America to the United States (continued)

Author and year	Aims	Country		Participants		Setting	Data collection technique	Time in transit	Categories of analysis identified
		Origin	Transit	N	Age and sex				
8. Cano Collado et al., 2022	To identify the relationship between the migratory process, the COVID-19 epidemic and the mental health of migrants, living in a refuge in Mexico	Honduras and Guatemala	Mexico	15 migrants	Eight women and seven men between 21 and 48 years old	One shelter located in Tabasco, Mexico	Semi-structured interviews	Time spent in Mexico: from one month to one year	Some migrants reported psychophysiological manifestations due to migration difficulties (headache, sleep disorders, suffocating sensation, anorexia). MIT not reporting these symptoms had protective factors (resilience, spirituality and family). Homesickness, pain, guilt, melancholy, listlessness, low self-esteem, loneliness, feelings of failure were reported. Migrants perceived COVID-19 pandemic as an additional difficulty: they expressed fear of infection, worry and stress
9. Silverstein et al., 2021	To understand the psychological and physical effects of Migrant Protection Protocols in documents produced on behalf of asylum-seekers forced to remain in Mexico	Not specified	Mexico	11 identified legal declarations and forensic medical affidavits	Not specified	Not especified	Thematic analysis of legal declaration and forensic medical affidavits	Not specified	Trauma (especially psychological abuse), lack of safety and health care access, stress, and physical and psychological sequelae. Psychological sequelae subthemes included anxiety, depressive, post-traumatic symptoms and suicidality. All these were identified in the post-request period whereas none of them were identified during transit

* Although these studies have a group of three participants from Mexico, it was decided to include them because the data they offer are relevant to the topic addressed in this review.

Common risk factors and conditions during transit

Some studies highlighted the vulnerable conditions experienced throughout the migration journey (Berenzon-Gorn et al., 2023; Laughon et al., 2023; Rodríguez, 2022; Soria-Escalante et al., 2022). These include exposure to violence, whether physical, sexual (Soria-Escalante et al., 2022), symbolic, or structural, committed by either state or non-state actors; abuse by authorities or criminal groups, including extortion, physical mistreatment, and psychological persecution; discrimination, based on migrant status, gender identity, or ethnicity, particularly for racialized and LGBTQ+ migrants; food insecurity and lack of shelter (Laughon et al., 2023), which exacerbate stress, fatigue, and feelings of helplessness; and uncertainty and prolonged waiting times, which contribute to feelings of entrapment and a lack of control over one's circumstances (Berenzon-Gorn et al., 2023; Rodríguez, 2022).

Experiencing several of these conditions was strongly associated with heightened levels of psychological distress and increased prevalence of anxiety and depressive symptoms. Research indicates that gender- and identity-based discrimination compounds these effects, placing transgender individuals and women at particular risk for mental health deterioration (Berenzon-Gorn et al., 2023; Soria-Escalante et al., 2022).

Prevalence of mental disorders and trauma

Among the few quantitative studies available, Altman et al. (2018) reported the prevalence of specific psychiatric disorders in a sample of MIT: the four most prevalent disorders were current major depressive episodes (22%), alcohol dependence (13%), current panic disorder (12%) and alcohol abuse (11%).

In addition, 53% of the sample met the diagnostic criteria for more than one mental disorder. The likelihood of presenting with depressive symptoms increased with both the length of the migration journey and exposure to abuse. Importantly, individuals who had a job waiting for them in the United States were significantly less likely to present with depressive symptoms, suggesting that a sense of future stability may act as a protective factor (Altman et al., 2018).

Just under 20% of participants reported having suffered a traumatic experience in their country of origin prior to emigrating while 66% reported having been abused (by

authorities, traffickers and/or civilians) during their northbound journey (Altman et al., 2018).

Gendered and identity-based vulnerabilities

A critical theme in the literature is how mental health challenges are shaped by gender and sexual identity. Transgender migrants face a dual burden of discrimination: as migrants and as gender minorities. Many of them report being forced to pass as men to avoid targeted violence, a strategy that reproduces the very repression and invisibility they sought to escape by migrating. This identity suppression contributes to deep psychological strain and internal conflict.

Women in makeshift camps or shelters frequently reported living in a constant state of fear, hypervigilance, anxiety, and sleep deprivation due to the pervasive insecurity (Laughon et al., 2023). Their narratives reveal the continuous threat of sexual violence, leading many to adopt invisibility as a survival strategy (Soria-Escalante et al., 2022). However, some studies also noted that women developed informal protection networks with others in similar circumstances, which served as an emotional buffer and source of sisterhood (Soria-Escalante et al., 2022).

Psychological sequelae of migration conditions

Qualitative findings underscore the role of structural, symbolic, and everyday violence in shaping mental health outcomes. The study by Rodríguez (2022) described how these forms of violence intersect to produce a state of self-invisibilization, in which migrants deny or suppress their emotional and physical needs to survive hostile contexts. Some migrants reported preexisting childhood trauma, substance use as a coping mechanism, and the development of behavioral adaptations in response to chronic exposure to risk.

The psychological burden becomes especially acute for migrants traveling with children. Caregiving under conditions of extreme uncertainty increases emotional distress and feelings of powerlessness, as noted by Berenzon-Gorn et al. (2023).

Mental health during the COVID-19 pandemic

The COVID-19 pandemic exacerbated the psychological stressors faced by MIT. In addition to the fear of infection, migrants experienced heightened distress due to overcrowding in shelters, social isolation, and a sense of abandonment by immigration authorities (Cruz Piñeiro & Ibarra, 2022). The principal mental health stressors during this period were not only linked to the virus itself, but to the suspension of migration plans, prolonged stagnation, and the perceived collapse of institutional support.

Accidents and existential impact

A particularly harrowing context for psychological suffering was described in the study by Alquisiras Terrones & Zapata Aburto (2022) exploring the experiences of migrants who suffered amputations after accidents while riding La Bestia, the freight train many migrants use to travel north. These individuals reported profound grief, existential questioning, and the collapse of their migration aspirations. Nevertheless, some reinterpreted their suffering through spiritual or religious frameworks, constructing narratives of resilience and divine purpose as a way to regain meaning and agency in the aftermath of traumatic experiences.

Resilience and coping strategies

Despite the overwhelming stressors, some studies emphasized the role of resilience in shaping mental health outcomes. Religion, spirituality, personal goal-setting, and social or institutional support were cited as key protective factors (Lemus-Way & Johansson, 2020). These sources of strength were associated with reduced occurrence of psychosomatic symptoms such as fatigue, insomnia, headaches, and anxiety (Cano Collado et al., 2021). Resilience functioned not only as an individual trait but as a dynamic process sustained through interpersonal relationships and collective practices (Cano Collado et al., 2021; Lemus-Way & Johansson, 2020).

Post request phase

Whereas most studies focus on the transit period, the research by Silverstein et al. (2021) examined the post-request phase and found continued mental health deterioration among MIT waiting in Mexico. Psychological sequelae included anxiety, depression, post-traumatic symptoms, and even thoughts and behaviors related to suicide. These mental health symptoms were identified after the asylum application, rather than during the journey itself, suggesting that the uncertainty and systemic exclusion endured during the post-request phase also perpetuate psychological harm.

Substance use

Only one article (Altman et al., 2018) explicitly inquired about substance use, finding that 13% of the sample had alcohol dependence and 11% abused alcohol. A high number of journey attempts and experience of abuse (torture, persecution, or mistreatment by the community, authorities, or family before emigrating) were significantly associated with greater odds of alcohol dependence. MIT who were ill or required medication were more likely to abuse

alcohol than those who were not ill. MIT with family or relatives in the United States were five times more likely to have alcohol dependence and abuse (OR = 4.86 and 5.07 respectively).

DISCUSSION AND CONCLUSION

This scoping review identified ten articles evaluating the mental health and substance use of MIT from Latin America to the United States. Findings show that their health has been poorly evaluated due to several factors faced by both migrants, the health care systems, researchers, and civil society organizations in the countries through which they pass. Reasons include stigma and discrimination, language and cultural barriers, as well as irregular migration status. The constant need to keep moving to reach their intended destination is also a challenge. This factor compounds the difficulty of assessing, diagnosing, and treating this population.

Most of the research analyzed in this review used a qualitative methodology. Further research should include more extensive diagnostic evaluations of mental health, substance use and protective factors such as resilience and coping strategies in migrants in transit thought countries other than Mexico.

All the information analyzed in this review was obtained from MIT through Mexico. Nine of the included studies were conducted in contexts supported by civil society organizations and in public places rather than official or government institutions. This pattern of data collection can be explained by several interrelated factors. First, MIT often travel with irregular migratory status, placing them in a position of increased legal and social vulnerability. Accordingly, they may seek to avoid contact with formal institutions or government actors due to the risk of detention and deportation. Second, several of the qualitative studies included in this review document widespread mistrust of authorities among MIT, rooted in previous experiences of abuse, discrimination, or neglect at the hands of law enforcement or migration officials. These experiences contribute to a climate of fear and reluctance to seek help from state-run services. Consequently, civil society organizations and humanitarian actors often become the primary points of contact for both support and research, as they are perceived as safer, more accessible, and more empathetic environments for MIT. This context not only shapes the conditions under which data on mental health is collected but also highlights the critical role of non-governmental spaces in documenting and addressing the psychosocial needs of migrants in transit through Mexico.

At this point, the question arises as to what type of services are offered in the shelters where MITs are housed and whether these services include mental health care. Answering this question is a challenge for future research.

According to Gargano et al. (2022), transit countries face challenges in covering basic living necessities such as food, shelter and healthcare access. This is the case of Mexico, which does not fulfil the criteria to be considered a safe third country since it fails to meet the standards established by the United Nations High Commissioner for Refugees of offering security and guarantees that migrants will not be deported to their countries of origin (Instituto para las Mujeres en la Migración, 2019). The social, economic, and political conditions in Mexico hinder the observance of these guidelines. Nevertheless, the number of asylum requests has grown in the past five years, with 29,631 requests being received in 2018 and 140,812 in 2023 (Alto Comisionado de las Naciones Unidas para los Refugiados, 2023). This has happened even though structural and social violence and organized crime increase migrants' exposure to mass kidnapping, extortion, and human trafficking (París Pombo et al., 2016).

The desire to continue their migratory journey forces MIT to be continually on the move, meaning that there is no community context to welcome them. This makes them a population with characteristics and needs that are difficult to either address or study. Future efforts in transit countries should consider this characteristic.

According to the findings of this review, there is a dearth of information on the mental health of migrants in transit through Latin America to the United States, pointing to the need for further research on this topic.

The analysis of the ten articles included identifying the effects of being in transit on MIT. These included the anxiety, depression, and psychological distress caused by the uncertainty of being able to reach their destination, and the experience of the different types of violence and discrimination suffered in both their countries of origin and during transit in Mexico before reaching the United States.

In the studies analyzed, no significant differences in mental health outcomes were identified based on the migrants' country of origin. This finding is noteworthy, as it suggests that the psychological distress and mental health symptoms experienced by migrants in transit (MIT) may be more closely related to shared conditions of vulnerability during the migratory journey—such as exposure to violence, uncertainty, precarious living conditions, and lack of access to services—than to specific national or cultural backgrounds. However, the absence of differences by country of origin does not necessarily imply that all migrants experience transit in the same way. Rather, it points to the need for further research to explore how structural and situational factors common to transit through Mexico shape mental health, possibly overriding individual differences based on nationality.

It is important to address this situation and raise awareness of the mental health of MIT to ensure they receive necessary care and protection. This requires the countries

through which they transit to develop public policies to address barriers to healthcare access, promote cultural sensitivity, and provide adequate professional, social, and financial resources for their mental health.

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Conflict of interest

The views expressed in this manuscript are solely those of the authors in their capacity as subject-matter experts and do not represent the official position of Centros de Integración Juvenil A.C.

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Hegemonic Masculinity and Medical Professional Identity: An Interpretative Phenomenological Analysis of the Undergraduate Medical Internship in Mexican Public Hospitals

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ABSTRACT

Introduction. Hegemonic masculinity as a dominant cultural ideal permeates the medical field, shaping the professional identity of both women and men through masculinized norms. This logic reinforces educational structures and dynamics that are not neutral but rather reproduce gender inequalities. **Objective.** To explore how hegemonic masculinity influences the construction of professional identity among male and female medical students during the Undergraduate Medical Internship in Mexican public hospitals, perpetuating gender inequities within the field of medicine. **Method.** A study was conducted using the Interpretative Phenomenological Analysis approach, based on 23 semi-structured interviews with former medical interns (10 men and 13 women) from Mexican public hospitals. Participants were recruited through both a virtual and an in-person call for participation. **Results.** Male students face greater demands as a test of their worth, while female students, although sometimes treated more leniently, are symbolically devalued and excluded from key formative experiences. The figure of the physician remains associated with masculinity, reinforcing gender stereotypes. Hospital hierarchies, shaped by this logic, reproduce power relations that sustain symbolic violence in medical education. **Discussion and conclusion.** Hegemonic masculinity shapes medical identity by associating the physician's role with masculine attributes such as authority, emotional control, and competence. This construction reinforces gender inequalities, negatively affecting the professional development and well-being of medical students. It is essential to implement policies and programs promoting equity and ethical hierarchical relationships to foster an inclusive, respectful educational environment.

Keywords: Gender bias, gender role, gender identity, internship and residency, gender-based violence, phenomenology.

RESUMEN

Introducción. La masculinidad hegemónica, como ideal cultural dominante (Connell, 1995), permea el campo médico y moldea la identidad profesional de mujeres y hombres bajo normas masculinizadas. Esta lógica refuerza estructuras y dinámicas educativas que no son neutrales, sino que reproducen desigualdades de género. **Objetivo.** Explorar cómo la masculinidad hegemónica influye en la construcción de la identidad profesional de estudiantes de medicina -hombres y mujeres- durante el Internado Médico de Pregrado en hospitales públicos mexicanos perpetuando desigualdades de género dentro del campo médico. **Método.** Se realizó un estudio con enfoque de Análisis Fenomenológico Interpretativo, a partir de 23 entrevistas semiestructuradas con exinternos (10 hombres y 13 mujeres) de hospitales públicos en México reclutados mediante una convocatoria virtual y otra presencial. **Resultados.** Los hombres enfrentan mayores exigencias como prueba de su valía, las mujeres, aunque pueden recibir un trato más indulgente, son simbólicamente desvalorizadas y excluidas de experiencias formativas. La figura del médico sigue asociada a la masculinidad, reforzando estereotipos de género. Las jerarquías hospitalarias, configuradas por esta lógica, reproducen relaciones de poder que sostienen la violencia simbólica en la enseñanza médica. **Discusión y conclusión.** La masculinidad hegemónica configura la identidad médica al asociar el rol del médico con atributos masculinos como la autoridad, el control emocional y la competencia. Esta construcción refuerza desigualdades de género y afecta el desarrollo profesional y el bienestar del estudiantado de medicina. Es fundamental implementar políticas y programas que promuevan la equidad y relaciones jerárquicas éticas, a fin de fomentar un entorno educativo inclusivo y respetuoso.

Palabras clave: Sesgo de género, rol de género, identidad de género, internado y residencia, violencia de género, fenomenología.

INTRODUCTION

Medicine, historically built on a patriarchal structure, continues to reproduce gender inequalities, affecting the professional training of its practitioners (Esteban, 2006; Federici et al., 2010; Villanueva, 2023). Although the feminization of medical schools has increased in recent decades, this shift has not been accompanied by a substantial transformation of dominant professional practices. Rather, it primarily reflects the growing number of female students and graduates without challenging the underlying power dynamics (Wiedmann et al., 2023). Hegemonic masculinity, defined as a set of practices that legitimize and reproduce the dominance of men over women and subordinate masculinities (Connell, 1995), serves as a cultural standard that shapes professional education and clinical practice, perpetuating stereotypes that disproportionately affect women (Sharma, 2019; Villanueva, 2023). This model reproduces inequalities and symbolic violence within the medical field (Frias & Erviti, 2012).

From Bourdieu's perspective (2007), this model is internalized through the medical habitus, embodied dispositions shaped by professional socialization. Structured within a hierarchical field, this habitus reflects symbolic capital tied to hegemonic masculinity, which grants recognition, authority, and legitimacy. Medical students therefore not only acquire clinical knowledge but also gendered ways of acting and relating that reinforce dominant norms. This dynamic legitimizes hierarchy without coercion, enacting symbolic violence and pressuring those who deviate to conform, thereby reproducing gender inequality as professional neutrality (Bourdieu, 2007).

This study focuses on the experiences of students in the Undergraduate Medical Internship (UMI) undertaken during the last year of the medical degree, a theoretical-practical academic cycle completed in clinical fields forming part of the Bachelor of Medicine core curriculum, according to the Secretaría de Salud de México (SSA, 2023). It is an essential stage due to its formative and critical nature for medical careers, as it constitutes the transition between theoretical learning and clinical practice, a period when students directly encounter hospital dynamics, characterized by strict hierarchies, unequal power relations, and stringent demands (Villanueva, 2019).

These conditions make them a particularly vulnerable group to abuses of power, including forms of gender-based violence. In Mexico, it has been reported that during the UMI, 71% of medical students did not have their mealtimes respected by the authorities; 25% were subjected to harassment; 35% were exposed to violence and abuse, and a further 35% were victims of discrimination (Fuentes et al., 2015). A prevalence of 83% of sexual harassment was recently identified in this population, which was higher in women (89.4%) than men (71.4%) (Granados et al., 2024). This context of vulnerability has been found to be associated with the deterioration of student mental health, including high rates of depression (Anderson et al., 2022; Ayala-Burboa et al., 2024; Vilchez et al., 2020) and even suicidal ideation (Ayala-Burboa et al., 2024).

UMI is also a key point in the construction of medical identity, since it is during this stage that students internalize the norms and values that will define their professional practice. This socialization process is heavily shaped by patriarchal structures that perpetuate a masculinized medical identity, leading to the systematic exclusion and devaluation of women, especially those in training, and of non-hegemonic forms of masculinity within the medical field (Sharma, 2019; Villanueva, 2023). International studies have shown that the perception of the doctor as a male authority figure limits women's learning and leadership opportunities, even in contexts where they have the same or more training than their male colleagues (Overland et al., 2019; Sánchez et al., 2024).

Given the evidence that patriarchal structures perpetuating a masculinized medical field affect the professional training of male and female physicians by consolidating inequalities that persist in medical practice (Fnais et al., 2014; Sharma, 2019), it is essential to explore how hegemonic masculinity influences the construction of medical identity among male and female students during the UMI. Exploring the experiences of this group makes it possible to identify the factors that perpetuate inequalities and generate knowledge to inform institutional policies and practices aimed at transforming medical culture. This could contribute to proposing strategies to mitigate negative impacts on student well-being, and promote a more equitable and inclusive environment from the earliest stages of training (Chávez et al., 2016; Granados et al., 2024).

METHOD

Study desing

Interpretative Phenomenological Analysis (IPA) was selected as it facilitates an in-depth exploration of the subjective experiences of Undergraduate Medical Interns (UMIs), focusing on the meanings they assign to their lived experiences (Creswell, 2017; Duque & Aristizábal, 2019; Smith et al., 2009). Rooted in Husserl's phenomenology, IPA emphasizes the analysis of individual perspectives on specific events (Fuster, 2019; Husserl, 1982). This study adhered to the methodological guidelines proposed by Smith et al. (2009).

IPA is particularly suited to the UMI context, which is marked by emotional challenges, hierarchical dynamics, and power abuse. It allows for both the description and interpretation of experiences, situating them within the institutional and cultural framework of medicine, and inte-

grating individual narratives with shared social meanings to illustrate power dynamics.

Participants

Participants were selected via purposive sampling to identify those with relevant, direct experience of the phenomenon (Smith et al., 2009). Inclusion criteria were voluntary participation; being aged over 18; and having completed the UMI at a Mexican public hospital within the year prior to data collection. This ensured recent recall while avoiding administrative ties that might limit free expression. The number of participants was determined based on the criterion of theoretical saturation.

Procedure

Informants were recruited through both a virtual and an in-person call for participation.

For the virtual call, a Facebook group of former medical interns was identified, and an invitation posted with the administrator's approval. It included the study's objective, eligibility criteria, participation method, confidentiality assurances, and the principal investigator's email. The use of digital platforms expanded the study's geographical reach, overcoming travel and cost barriers while incorporating diverse perspectives. It also offered greater flexibility regarding time and location for participation.

For the in-person call to participate, permission was requested from the Health Services of a state in central Mexico. Once granted, eight medical units were visited, and six information sessions were held to personally invite students to participate in the study. The in-person recruitment strategy complemented the virtual call and contributed to achieving an adequate number of participants for the study's objectives. This approach enabled direct engagement in relevant settings, enhancing both study dissemination and recruitment.

Of those who were invited virtually, 15 contacted the researcher, eight of whom participated in an interview. Regarding the face-to-face invitation, 82 personal invitations were made, 15 of which resulted in an interview.

A semi-structured interview was conducted, as this technique allows sensitive topics to be addressed and provides a deep understanding from the perspective of those involved (Balcazar et al., 2015). A semi-structured interview guide (Table 1) was developed based on the objective of the study and an extensive literature review. The guide outlined areas of inquiry to be explored but was flexible regarding sequence and content, as the interviewer was free to introduce additional questions to clarify concepts or gather more information. The areas of inquiry focused on participants' recognition and interpretation of experiences of violence, their perceptions of gender and hierarchy, and the emotional and behavioral responses resulting from these experiences.

Because some topics could be sensitive for participants, or in case situations arose during the interview that required emotional support, the principal researcher and sole interviewer received training in psychological first aid. Likewise, if a participant requested advice or psychological support related to a particular situation, the appropriate information would be provided. No situations requiring emotional support occurred, nor were any requests for psychological assistance received after the interview. On the contrary, participants expressed gratitude for the opportunity to share their experiences.

Table 1
Areas of inquiry and central questions from the interview guide

Area of inquiry	*Central question*
Experience of the UMI from a gender perspective	What was UMI like for you? What did this experience mean to you?
Experiences of demotivation and perception of gender roles and stereotypes during UMI	In your experience, have you ever felt or perceived comments or attitudes that made you question your decision to study medicine? How did you experience that moment?
Perceptions and meanings of gender discrimination in UMI	In your experience, how did you perceive the differences in the treatment of women and men during your UMI?
Experiences related to the assessment and objectification of the body by gender in the medical context	How did you experience or perceive the relationship between physical appearance and the treatment you received during your UMI? What did it mean to you?
Experiences and meanings associated with hierarchies and authority relations during UMI	What was your experience of interacting with hierarchies during your UMI?
Perceptions and experiences of situations of violence in the UMI environment	At any point during your UMI did you experience or witness any situation that you perceived as hostile or violent? How did you experience it and how did you make sense of it?
Experience and perception of the possibilities and limitations of reporting in cases of violence	In your experience, what is it like to report situations of violence in UMI? What feelings or reflections does this elicit?
Reflections on the impact of UMI on mental and physical health	How do you feel your experience during the UMI influenced your physical and emotional well-being? Do you notice any changes in your personality or way of thinking after this period?
Personal strategies and resources to cope with the challenges of UMI	If you could share something with someone about to begin their UMI, based on your own experience, what would you recommend for them to navigate this stage?

Note: UMI = Undergraduate Medical Internship.

All interviews, regardless of whether participants were recruited through a virtual or in-person call, were conducted remotely online, lasting between 60 and 90 minutes. All of them were audio-recorded, with the interviewee's prior authorization, using a digital recorder. The files were stored in .mp3 format and transferred to a secure device for subsequent transcription and will be held by the principal investigator for five years and then deleted. To ensure confidentiality, participants were assigned alphanumeric codes, and quotes were adapted when necessary to prevent identification.

All interviews took place without incident. At the end of each interview, an informative infographic on how to identify gender violence in hospital settings was sent to participants' personal emails, together with a directory of places to report cases of violence in any state in Mexico and a list of contact numbers for free online psychological support.

Analysis

Data analysis was conducted using the IPA approach, which emphasizes the exploration of personal experiences by focusing on events that hold particular significance for those who undergo them. Theoretical saturation was reached through the identification of consistent reiterations, with no new relevant information emerging in consecutive interviews and the analytical process followed the stages outlined by Smith et al. (2009) and Duque & Aristizábal (2019) (Figure 1).

The audio-recorded interviews were transcribed verbatim by the principal investigator. Each transcript was then thoroughly reviewed to verify accuracy. The information was subsequently systematized using the qualitative analysis software ATLAS.ti 24, based on the following inclusion and exclusion criteria: inclusion criteria consisted of text fragments relevant to the research objectives; expressions of experiences, perceptions, emotions, or meanings related to the phenomenon; data that enriched thematic analysis; and recurring patterns or themes. Exclusion criteria included ambiguous comments or insufficient context, as well as fragments with comprehension issues or poor audio quality. Reflexivity was integrated into the analytical process through critical review of emerging categories with the co-author and constant comparison across cases, ensuring interpretative coherence and internal validation.

The coding strategy in ATLAS.ti 24 was performed manually, resulting in the creation of codes (Table 2). This process, aligned with the IPA approach, facilitated the systematic organization and rigorous analysis of qualitative data, ensuring both theoretical and conceptual coherence.

Following the IPA approach, the themes were organized and grouped based on their meaning or conceptual relationship. The analysis based on Bourdieu's theory (2007) allowed the narratives to be interpreted as expressions of the medical habitus, understood as a system of internalized dispositions that normalize symbolic violence. This coding was carried out through thematic nodes (e.g., professional gender doxa, male symbolic capital) that connected emerging categories with Bourdieusian postulates. A thematic table (Table 3) was then created to summarize this structure, presenting the classification of the main themes and their corresponding subthemes. For this publication, only Theme 1 Hegemonic Masculinity and the Construction of a Masculinized Medical Identity and its subthemes were considered.

Ethical considerations

The study was approved by the Research Ethics Committee of the Ramón de la Fuente Muñiz National Institute of Psychiatry with registration number CONBIO-ETICA-09CEI-010-20170316, and approval number CEI/C/026/2022.

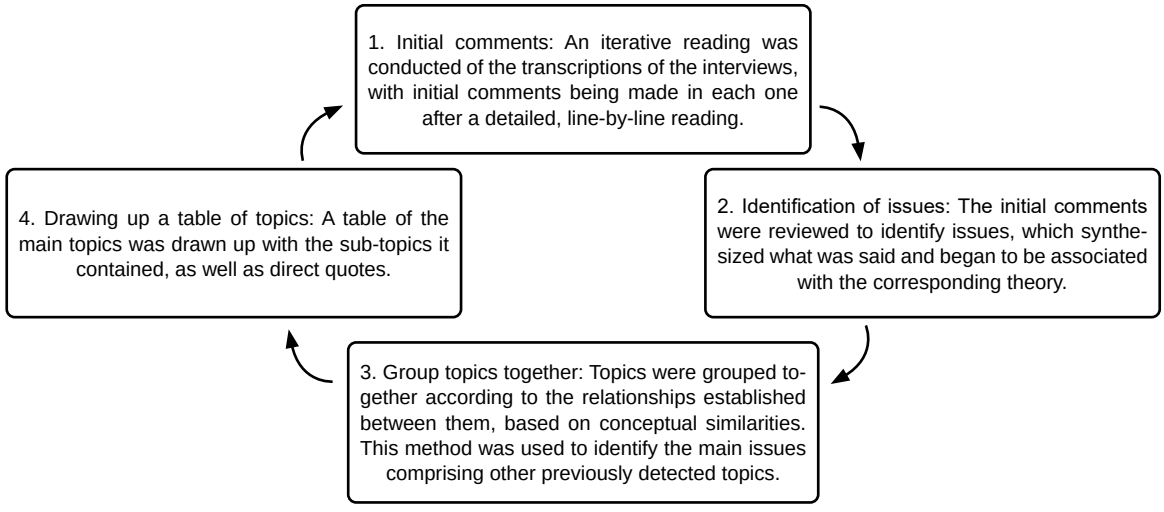


Figure 1. Steps for analyzing information through IPA.

Note: The figure shows the steps followed for data analysis using the IPA. (Duque & Aristizábal, 2019; Smith et al. 2009). IPA: Interpretative Phenomenological Analysis.

Table 2
Codes generated manually in ATLAS.ti 24 qualitative analysis software

Codes
Barriers to reporting observed or experienced violence
Behaviors related to reporting observed or experienced violence
Condescension towards men UMIs
Condescension towards women UMIs
Emotional consequences of violence experienced or witnessed by men UMIs
Emotional consequences of violence experienced or witnessed by women UMIs
Factors that facilitate reporting observed or experienced violence
Gender discrimination against men UMIs
Gender discrimination against women UMIs
Hierarchical order
Insufficient materials, equipment, or medical personnel
Justification of observed or experienced violence against UMIs
Lack of supervision
Medical negligence
Men UMIs' behaviors to avoid other types of violence (excluding sexual violence)
Men UMIs' behaviors to avoid sexual harassment
Physical health consequences for men UMIs
Physical health consequences for women UMIs
Public humiliation of men UMIs
Public humiliation of women UMIs
Punishment of men UMIs
Punishment of women UMIs
Questioning violence observed or experienced during UMI training
Risky behaviors affecting patient health
Sexual coercion of men UMIs
Sexual coercion of women UMIs
Sexual harassment of men UMIs
Sexual harassment of women UMIs
Specialty selection influenced by hostility in the field
Women UMIs' behaviors to avoid other types of violence (excluding sexual violence)
Women UMIs' behaviors to avoid sexual harassment

Note: UMIs = Undergraduate Medical Interns; UMI = Undergraduate Medical Internship.

RESULTS

Twenty-three interviews were conducted with 10 men and 13 women (ages 23–29) who had completed their UMI in public hospitals across various Mexican states, primarily in the northwest and central regions. Testimonies were coded by participant number (P#), W (woman), and M (man). The analysis revealed that medical identity was shaped by gender traits and stereotypes associated with hegemonic masculinity. This identity was constructed through mechanisms that reproduced male hegemony, organized into four main categories:

Gendered expectations and symbolic violence

This category examines how gender shapes expectations and treatment in medical training, influencing learning and professional identity. Hegemonic masculinity legitimizes unequal standards, normalizes violence against men, and rewards female conformity through symbolic devaluation. These dynamics reinforce hierarchies, perpetuating gender stereotypes in medicine. This is exemplified in the following participant's account:

> The doctors made the men do more and kind of spoiled us: *"Just do the rounds and you can go."* Men had to take notes, do lab tests, electrocardiograms, or dressings. In surgery, during wound care, women were allowed to go eat, but not the men.(P9M)

Paradoxically, although differential behavior towards women would seem to benefit them, it reduces the opportunities for learning and practice. The "benefits" UMIs women receive are related to expectations of conformity and submission that fail to recognize their professional capabilities. In fact, submission in the lower hierarchies is valued in the medical field as it contributes to the maintenance of the established order, with this conformity being associated with the stereotype of kindness, gentleness and servility that exists about women based on traditional femininity. This is reflected in this testimonial, *"Since we were only women and never caused any problems, the doctors never had any*

Table 3
Organization of the thematic table with its respective habitus component

Theme	*Subtheme*	*Habitus component*
Hegemonic masculinity and the construction of a masculinized medical identity	Gendered expectations and symbolic violence	*Professional gender doxa:* implicit beliefs that naturalize the differentiated demands placed on men and women in medical practice
	Masculinized authority and the devaluation of female physicians	*Male symbolic capital:* the male doctor embodies the legitimate archetype of medical knowledge, reinforcing his authority and social recognition
	Gendered interactions and hierarchical inequality	*Incorporated gendered dispositions:* dispositions for professional interaction shaped by socialization that reinforces gender-based power roles
	Incorporating hierarchy and discipline into medical identity	*Internalized hierarchical structures:* the medical habitus includes the acceptance of hierarchy as a "natural" form of organization and the legitimization of power

Note: *The habitus component* column links emerging themes with Bourdieu's theory (2007), showing how narratives reflect internalized social structures. UMI = Undergraduate Medical Internship.

complaints about us and with other male colleagues, it was not like that" (P6W).

These testimonies show how hegemonic masculinity shapes the treatment of UMIs, demanding more from men through verbal and physical violence on the assumption they should endure it. Women, in contrast, are spared physical abuse but face gendered forms of violence such as harassment. As one participant explained, "*Some attendings still believe men must endure insults, hits, even slaps. With the girls, it was more about sexual harassment, touching, staring, caressing."* (P10H)

Differentiated treatment not only reproduces gender stereotypes but also normalizes hostility and reinforces hierarchy in medical training. The medical habitus incorporates gender expectations, giving more credibility to male voices while minimizing or invalidating female contributions. As one participant noted, "*When we presented patients, some attendings would ask women extra questions, trying to make us slip up. Meanwhile, male peers got quick approval even when they explained less."* (P7M)

Masculinized authority and the devaluation of female physicians

This category examines how gender stereotypes shape the social representation of medical authority. The doctor is still perceived as male, influencing patient preferences and institutional dynamics. This perception undermines the legitimacy of female physicians, even when they hold higher hierarchical positions, reinforcing male dominance in professional recognition.

> We were doing medical rounds: the attending, the resident, and I were all women, and there was a male student. The patient always addressed him: *"Doctor, what will happen to me?"*, ignoring the attending. I realized that if patients see a man, even a student, they assume he's the doctor; if it's a woman, they say, "young lady" or "girl." (P7W)

This social perception reinforces hegemonic masculinity in medicine, perpetuating the idea of the doctor as a figure of male authority, and therefore once again, belittling women's competence in this field.

> In any rotation, even if we are both at the same level, a man and a woman, if a patient turns and sees us both, he nearly always prefers to speak to the man because it is sort of stigmatized: *"He wants to see the (male) doctor"* rather than a female one. I don't agree with that because in the end, we are both equally qualified. (P2M)

In the medical field, symbolic capital, encompassing professional respect, access to leadership positions, and public or institutional recognition, is unequally distributed, favoring the visibility and recognition of men and affecting the self-perception of female doctors in training, who must therefore do more to prove their ability.

Gendered interactions and hierarchical inequality

This category explores how medical identity is shaped by interactions within the hospital hierarchy. Gender influences how UMIs are treated by other health professionals, particularly nurses, who tend to respond more attentively to male interns and overlook female interns, reinforcing their subordinate status. As one participant noted, "*Nurses paid more attention to us than to female interns. I don't know why, but I noticed: if you're a woman, they ignore you; if you're a man, they respond."* (P2M)

This dynamic shows how the habitus of the medical field incorporates gender into the hierarchy, reinforcing the dominant position of men. As a result, female UMIs begin to incorporate this gender power gap into their medical identity, assuming an inferior hierarchical status to their male peers.

> Sometimes nurses were nicer to men: *"Yes, doctor, I've got the material."* We women had to get it ourselves. I knew I couldn't ask for anything. I learned to manage on my own, what to bring, how to prepare it. But with men it was: *"Here's the probe, the gel…"* They treated them completely differently. (P6W)

Relationships with senior doctors also reflect gender bias. Some female senior doctors give preferential treatment to male UMIs, who in turn recognize this difference. As one participant observed, "*The women gynecologists yelled at [female interns], made them run around, gave things back. But with male interns, it was: 'Don't worry, I'll do it, you've got your hands full.'"* (P9M)

These testimonials illustrate how the intersection between professional hierarchy and gender creates additional barriers for women in medicine, reflecting the persistence of hegemonic masculinity in power structures, which women themselves often reproduce.

Hegemonic masculinity shapes medical identity through gendered hierarchies. Within this logic, the "protective mantle" acts as relational capital that grants informal protection to women who conform to traditional gender roles. Women are protected but also sexualized; affective ties mediate access to opportunities, displacing technical knowledge and reinforcing stereotypes. This logic sustains symbolic violence by disguising inequality as subtle exchanges.

> There's the term "protective mantle." If you date another intern, you don't get any protection because you're at the same level. If you're an intern with a resident, your level of protection depends on their year. But if you're with an attending, you get the supreme mantle, since the attending outranks the resident, the resident won't scold you. It's a way of saying, *"I'm using my position to protect you."* (P11M)

Hierarchy becomes an instrument of domination that determines what is taught, who is protected, and who is recognized. This dynamic, echoed in participants' accounts,

illustrates how gendered hierarchies shape medical training by privileging those who align with dominant norms. As one participant remarked:

> I heard disparaging comments, mostly from male doctors (attendings and residents), *"You don't know because you're a woman, he's stronger, he knows more."* It was ironic; they flirted with us, explained and taught us more, but still preferred to rotate with men or assumed they were more capable than us. (P11W)

Incorporating hierarchy and discipline into medical identity

This subcategory analyzes how hierarchical structures are internalized and reproduced in medical practice, becoming part of the professional habitus. Hierarchy in this field is linked to hegemonic masculinity, expressed through authority, emotional control, and physical endurance, shaping an ideal physician model that excludes or marginalizes alternative professional roles.

Although hospital hierarchy defines functions, it also reinforces the inferior position of those at a lower rank. This logic imposes expectations of sacrifice and submission (to those at a higher rank with symbolic masculine power) as proof of commitment. It is reflected in repetitive minor tasks that wear down students for no pedagogical purpose. As one participant reflected:

> The hierarchy is strict and you have to understand your place. Throughout a doctor's career, hospital hierarchies are very rigid for better or worse. For better, because they help define your functions. For worse, because they're used to make you feel inferior and exploit you. (P11W)

Male and female UMIs depend on their superiors for knowledge, which forces them to submit to these hierarchies even if they perceive their negative effects. This position fosters a sense of devaluation in how both perceive themselves. One participant recalled being seen *"as someone who does the paperwork,"* treated like a secretary and scolded, *"You don't know anything, you shouldn't be here in the procedure, go do the paperwork."* (P2W)

These testimonials show how hierarchy becomes part of medical identity early on. It works as a mechanism of domination through power abuse and devaluation of subordinate experiences. As one participant recalled, *"Sometimes, just because of an attending's whim, we were all punished for a missed task: staying late, doing dressings, or taking on duties that weren't ours. But once we had been assigned, we couldn't say no."* (P6H)

As they rise in rank, some residents replicate the mistreatment they once received, regarding it as part of their role as superiors. Abuse of power therefore becomes normalized within medical training. As one participant recalled:

> Many of my peers adopted a superior attitude toward lower-ranking UMIs. I remember the day three female interns arrived, they pressured them a lot, saying: *"Let her do everything. Why are you doing it? You already have your servant, let her deal with it."* (P9H)

This behavior suggests that abuse of power is considered an inherent part of the learning process and career advancement. The rigid hierarchy restricts collaboration and reinforces isolation. One participant illustrated this dynamic in gynecology: *"The attending spoke to R4, who spoke to R3, then R2, even though the intern was there, R3 would tell R2, "Hey, tell R1 to tell his intern,"* and the intern would be right in front of him, so it seemed absurd to me. There were certain members we were not allowed to speak to. The R1s used to say to us, *'Tell us whatever you need, because remember that everything is done by hierarchy'"* (P10M).

Hospital hierarchy embodies a masculinized medical identity, concentrating power in authority figures who tend to reflect hegemonic masculinity. This authority not only organizes clinical work but imposes a logic of obedience and submission. As one participant remarked:

> There was a surgeon who was the assistant director. When he wanted to operate, no one else could use the operating room—even if it had already been scheduled. His wishes had to be respected, because he was the assistant director. (P5H)

DISCUSSION AND CONCLUSION

This study reveals that the construction of medical identity during the UMI is strongly shaped by gender norms and hierarchical power structures. Drawing on Bourdieu's concept of habitus, the findings show that interns and residents internalize values associated with hegemonic masculinity, thereby reproducing symbolic violence and perpetuating gender-based inequalities in clinical training (Bourdieu, 2007).

These results contribute to a growing body of literature highlighting how professional identity in medicine is not neutral but is built on hierarchical and gendered logics (Connell, 1995; Bourdieu, 2007; Jendretzky et al., 2020).

Unlike most international studies, which often focus on students in high-income countries, this research offers a situated perspective from the Mexican context, where hierarchical rigidity and gender stereotypes intersect with broader social inequalities. By doing so, it adds a Latin American voice to global debates on structural discrimination in medical education (Sharma, 2019; Brown et al., 2020).

Findings highlight that the medical habitus operates as a mechanism of symbolic violence, perpetuating gender hierarchies and discriminatory practices. For instance, women internalize their subordination to the profession, perceiving it not as oppression but as intrinsic to their professional role (Bourdieu, 2007). Symbolic violence normalizes inequities

by reinforcing hegemonic masculinity, which accumulates symbolic capital and excludes women from prestigious areas of practice (Fundación Juan Vives Suriá [FJVS], 2011).

Gender-differentiated performance standards within the medical field reflect expectations and treatment that vary according to the student's gender, as borne out by previous studies (Jendretzky et al., 2020). Male students are typically subjected to higher demands for technical perfection, which are linked to notions of authority and prestige (Gallegos, 2012). However, these expectations also make male students vulnerable, as failure to meet them invites increased scrutiny, jeopardizing their professional and gender identity (Connell, 1995).

Indulgence toward women, far from benefiting them, reinforces stereotypes of inferiority and submissiveness, thereby limiting their access to demanding roles and learning opportunities. This attitude stems from the perception of an alleged natural inferiority (FJVS, 2011) and is expressed as a form of benevolent sexism which, although disguised as protection, assumes that women lack the physical and cognitive capacities required to meet professional demands. In the medical field, for instance, this can result in their exclusion from activities such as surgical procedures (Sánchez et al., 2024). Moreover, this form of sexism characterizes women as more emotional and fragile, discouraging their participation in high-demand specialties (Samuriwo et al., 2020). These dynamics perpetuate sociocultural narratives that undermine women's abilities and rationality, thereby consolidating their exclusion from high-demand professional spaces (Sánchez-González, 2025; Brown et al., 2020).

The results showed that the historical representation of the doctor as a male figure not only structures the identity of medical professionals, but this habitus in turn structures (Bourdieu, 2007), and influences social perceptions of the doctor represented by the heterosexual white man, reinforcing gender bias (Brown et al., 2020; Sharma, 2019).

Other international (British Medical Association [BMA], 2021; Overland et al., 2019) and national studies (Sánchez et al., 2024) on UMIs showed that patients prefer to interact with male doctors, even if they are less qualified, undervaluing the competence of women. Likewise, interactions between UMIs and other health professionals, such as nursing staff and doctors, are marked by gender dynamics favoring men (Wlosko & Ros, 2019). Faced with the belittlement of their ability as doctors, women experience constant pressure to demonstrate their ability, which is why they must make more of an effort than men to avoid being judged for their alleged gender incapacity since poor performance could confirm negative stereotypes about them (Spencer et al., 2016). At the same time, female UMIs may assume this disparity as part of their professional identity, adapting to these unequal conditions (Sánchez et al., 2024).

This study highlights how medical identity is constructed by incorporating hierarchy as a central element. Hierarchies between UMIs, residents, and physicians define formal roles as well as structuring relationships of power, authority, and prestige. They are used to preserve the system that grants them dominance and abuse it for their benefit. This master-disciple socialization system promotes submission in the younger generations, developing dependence on their superiors.

Male and female UMIs are forced to accept this hostile treatment, reflecting the internalization and reproduction of gender stereotypes and power hierarchies as they rise through the ranks, perpetuating the cycle of abuse of power in teaching (Samuriwo et al., 2020).

Abuse of power by the upper hierarchy has been a constant in the medical field in the clinical part of medical studies (Fnais et al., 2014; Frank et al., 2006; Kisiel et al., 2020; Moreno et al., 2016), with those abusing their power over lower hierarchies generally being higher-ranking men (Chen et al., 2021; Fernández-Moreno, 2007; Fried et al., 2012; Jendretzky et al., 2020; Kisiel et al., 2020; Moreno et al., 2016; Reyes et al., 2019). These practices demean those occupying lower positions, limiting their opportunities for significant learning and reinforcing the self-perception of inferiority, particularly if they are women (Frank et al., 2024)

Women in medicine are challenged about their abilities and face differential treatment, microaggressions, and sexual harassment, eroding their confidence and performance (Frank et al., 2024). Moreover, microaggressions such as frequent disparaging slights, whether intentional, or unintentional, are linked to lower career and academic satisfaction, highlighting the impact of sexism on mental health and career development (Anderson et al., 2022). As a result of these experiences, women are more likely to present symptoms of burnout and suicidal ideation (Sprow et al., 2021).

Stereotype threat places an additional burden on women, who may reduce their self-efficacy and perseverance in challenging academic activities (Lin & Deemer, 2021) partly due to the pressure to prove they do not fit the stereotype (Brown et al., 2020), forcing them to make more of an effort to succeed in certain specialties (Colenbrander et al., 2020). It has also been reported that women study more than men to keep up with expectations and excel in clinical settings (Verdonk et al., 2014).

This constant onslaught of messages about their physical and cognitive inability, the stereotypes and traditional roles they must perform and the hostility they face creates a feeling in women that they are being prevented from advancing their careers (Chen et al., 2021; Kristoffersson et al., 2018), and being dissuaded from pursuing demanding specialties (Brown et al., 2020; Colenbrander et al., 2020; Jendretzky et al., 2020; Samuriwo et al., 2020; Stock & Kaifie, 2024), which stifles their professional ambitions (Chen et al., 2021) Moreover, gender expectations contradict and therefore diminish women's ability to be determined and ambitious in their professional future (Chen et al., 2021;

Frank et al., 2024; Villanueva, 2023). Unfortunately, many hostile behaviors towards women are displayed by other women, because female doctors may feel compelled to adapt to systems that prioritize male characteristics. This reveals the complexity of relationship patterns in the field of medicine where gender relations, both inter- and intra-gender, play a key role in the transformation or persistence of norms and values (Houchens et al., 2020). These behaviors hinder the development of support networks, perpetuating exclusionary practices and reinforcing the marginalization of women.

Limitations include the lack of statistical generalization due to the qualitative design, regional focus (central and northwestern Mexico), and reliance on retrospective narratives. Nonetheless, these accounts provide valuable insight into how participants made sense of their training. Gender dynamics were central to this analysis, but future research could further explore their intersection with race, class, and other axes of identity.

Several strategies could have an impact on the reduction of gender inequalities observed in medical education. First, it is important to reform medical curricula by considering a feminist and intersectional approach that promotes the dismantling of patriarchal stereotypes and prioritizes equity. Second, strong, genuinely impartial and transparent complaint mechanisms must be put in place to effectively address cases of harassment and discrimination. It is also essential to foster support networks among women, enabling them to counter horizontal violence and challenge patriarchal norms. Finally, it would be desirable to develop processes of institutional reflexivity that question hierarchical practices and promote cultural change toward a more inclusive environment (Dirk, 2020; Bourdieu, 2007).

This study uses IPA, theoretically grounded in Bourdieu and Connell, to provide a nuanced understanding of subjective experiences in medical training. Future research could enhance these insights through hermeneutic or mixed-methods designs, allowing for a more comprehensive analysis that integrates broader contextual dimensions and diversifies epistemological approaches.

In conclusion, gender norms and institutionalized hierarchical structures perpetuate a medical culture that negatively affects all professionals, but disproportionately women. Changing this paradigm requires a collective effort, structural reforms, and continuing education to foster an equitable, respectful culture.

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Conflict of interest

The authors declare that they have no conflicts of interest.

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Identification of the Social Cognition Construct Using WAIS and WAIS-III in Individuals with Severe Psychiatric Disorders: A cross-sectional study

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ABSTRACT

Introduction. Patients with severe psychiatric disorders (SPD) experience deficiencies in social cognition (SC), which involves cognitive skills for social interaction including the perception, interpretation and generation of responses required to determine one's own and others' intentions, disposition and behaviors. **Objective.** Evaluate the factorial validity of a social cognition construct using subtests from the WAIS and WAIS-III in patients with severe psychiatric disorders through confirmatory factor analysis (CFA). **Method.** A cross-sectional study was conducted with a non-probabilistic sample of 291 patients with severe mental disorders and 37 control subjects between 18 and 47 years old evaluated with the Wechsler scales. **Results.** The SC construct was identified using the 11 sub-tests of the WAIS and WAIS-III through CFA. A four-factor model was obtained, comprising verbal comprehension, perceptual organization, working memory and social cognition factors. The SC factor consisted of the Picture Arrangement and Incomplete Figures subtests depicting social situations, people and objects, which requires the identification of specific details and knowledge of common social situations. **Discussion and conclusion.** This study provides information for the assessment and analysis of the SC construct evaluated with the WAIS and WAIS-III social cognition and social knowledge components for mental disorders. These findings can guide treatment and psychotherapeutic interventions for the comprehension of social and affective situations in patients with severe psychiatric diagnoses.

Keywords: Social cognition, assessment, mental disorders, WAIS.

RESUMEN

Introducción. Los pacientes con trastornos psiquiátricos graves exhiben deficiencias en la cognición social (CS) que implica habilidades cognitivas para la interacción social incluyendo la percepción, interpretación y generación de respuestas necesarias para determinar las intenciones, disposiciones y comportamientos propios y de los demás. **Objetivo.** Evaluar la validez del constructo de cognición social usando las subpruebas del WAIS y WAIS-III en pacientes con trastornos psiquiátricos graves a través del análisis factorial confirmatorio (AFC). **Método.** Se realizó un estudio transversal con una muestra no probabilística de 291 pacientes con trastornos mentales graves y 37 sujetos control entre 18 y 47 años evaluados con las escalas Wechsler. **Resultados.** Se identificó el constructo de CS usando las 11 subpruebas del WAIS y WAIS-III mediante AFC. Se obtuvo un modelo de cuatro factores compuesto por: comprensión verbal, organización perceptual, memoria de trabajo y cognición social. El factor de CS se conformó por las subpruebas de ordenación de dibujos y figuras incompletas que implican la percepción y análisis de imágenes que representan diversas situaciones sociales, personas y objetos que requieren de la identificación de detalles específicos y del conocimiento de situaciones sociales comunes. **Discusión y conclusión.** Este estudio aporta información para el estudio y análisis del constructo de CS evaluado con WAIS y WAIS-III en sus componentes de percepción social y conocimiento social en diversos trastornos mentales. Estos hallazgos pueden guiar al tratamiento e intervenciones psicoterapéuticas dirigidas a la comprensión de situaciones socio-afectivas en pacientes con diagnósticos psiquiátricos graves.

Palabras clave: Cognición social, evaluación, trastornos mentales, WAIS.

INTRODUCTION

Severe psychiatric disorders (SPD) are conditions that affect thinking, cognition, mood, emotion regulation, and behavior as well as the ability to establish healthy interpersonal relationships and develop functional abilities in key aspects of daily life. These include personal hygiene, self-care, autonomy, learning, leisure/entertainment, and economic self-reliance (López & Ots, 2017). The International Classification of Diseases 11th Revision (ICD-11) includes schizophrenia, schizotypal and delusional disorders, mood and bipolar disorders, neurotic disorders, stress-related disorders and somatoform disorders in the SMD section (Organización Mundial de la Salud [OMS], 2019).

According to the World Health Organization (WHO), during the period 2019-2020, one in eight people worldwide suffered from an SPD, affecting nearly 450 million people. In Mexico, there are reported to be approximately 15.7 million people with a mental disorder (Medina-Mora et al., 2023).

Moreover, when assessed with neuropsychological tests, patients with SPD present significant deficiencies in the domains of attention, memory, executive function, and social cognition (SC), the set of cognitive skills required for social interaction. The latter include the perception, interpretation, and generation of responses required to determine one's own and other people's intentions, disposition, and behaviors (Frith & Frith, 2007; Kim & Hommel, 2019). Researchers have also reported difficulties in the emotional processing, attributional style, and theory of mind domains of social cognition in patients with SPD. These are evaluated with tests such as the MSCEIT, Reading the Mind in the Eyes Test and Faux Pas Recognition Test (Kittel et al., 2022; Knight & Baune, 2019;Vlad et al., 2018).Despite advances in the measurement of social cognition, core domains such as social perception and knowledge remain underexplored due to the limited availability of standardized, validated tools. It was therefore proposed to evaluate the aforementioned components in the social cognition construct with tests containing items with social content as in the Wechsler intelligence scales (Wechsler, 1955; Wechsler, 1997). The Wechsler subscales of Comprehension and Picture Arrangement are designed to assess aspects of common sense, knowledge of conventional norms of behavior, sequential thinking and interpretation of socio-affective situations (Ramírez & Rosas, 2007). Neuroanatomical correlates of these subtests have even been found in neuroimaging studies of the orbitofrontal region in individuals with and without SPD (Nestor et al., 2010; Nestor et al., 2013).

Exploratory factor analyses of the Wechsler scales have identified the Full-Scale IQ and indexes of Verbal Comprehension (VC), Perceptual Organization (PO), Working Memory (WM), and Processing Speed (PS). These scales yield valuable information on intellectual abilities and cognitive information processing in various populations and clinical settings. However, confirmatory factor analyses (CFA) have also been undertaken to identify an additional index associated with social cognition (SC). Allen and Barchard (2009) conducted a confirmatory factor analysis (CFA) of the 14 subtests in the WAIS-III and the 11 subtests in the WAIS on the standardization sample of the instrument in the United States, comprising 2450 subjects. The results of this research demonstrated a good fit of the data to the five-factor model that includes the social cognition factor together with the verbal comprehension, perceptual organization, working memory, and processing speed factors. The social cognition factor consisted of the Pictures Arrangement (PA), Picture Completion (PC), and Object Assembly (OA) subtests when the 14 WAIS-III subtests were analyzed. When the 11 WAIS subtests were examined, the CFA yielded a model consisting of four factors including the social cognition factor comprising the picture arrangement and picture completion subtests. These results supported the construct validity of the social cognition factor measured using the Wechsler scales. Allen et al. (2007) administered the WAIS to 169 men with schizophrenia, performing a CFA to determine the presence of the four-factor model that included the social cognition factor and the typical indices of verbal comprehension, perceptual organization and working memory. The social cognition factor in this study consisted of the picture arrangement and picture completion subtests, which in turn showed significant correlations with the negative symptoms of this condition. Finally, Goldstein et al., (2008) conducted a CFA of the 11 subtests of the WISC and WAIS on 137 children and 118 adults with high-functioning autism spectrum disorder (ASD). The aim was to determine whether factor models with the social intelligence or social cognition factor could be found in those with ASD and a group of healthy subjects. The results of this study confirmed that the four-factor model incorporating the social intelligence or social cognition factor provided the best fit for both the ASD and healthy subjects groups.

The studies mentioned above corroborate the existence of the social cognition construct in healthy subjects, and patients with schizophrenia and or ASD. However, it is still necessary to evaluate the stability and sensitivity of this factorial model in other clinical populations with various forms of brain dysfunction and complications in social interaction. To our knowledge, no research has been conducted to identify the social cognition factor in SPD using the Wechsler scales. The present study aimed to evaluate the factorial validity of a social cognition construct using the WAIS and WAIS-III subtests in patients with severe psychiatric disorders through confirmatory factor analysis (CFA). Additionally, verbal comprehension, perceptual organization, working memory and social cognition factors

in various SPD groups were compared. The WAIS and WAIS-III are validated, standardized instruments with appropriate psychometric properties widely used in the neuropsychological evaluation of patients with psychiatric conditions. We therefore consider that assessing the factor structure of these instruments including the social cognition factor could enhance understanding of cognitive functions in SPD.

METHOD

Study design

A non-experimental, quantitative, cross-sectional study was conducted with a non-probabilistic sample of 291 SMD patients and 37 control subjects ages 18 to 47.

Participants

A non-probability sample of 291 SPD patients was evaluated. Seventy-one had had been diagnosed with schizophrenia (SZ), 98 with Bipolar I and Bipolar II disorder (BD), 67 with major depressive disorder (MDD) with and without psychotic symptoms and 55 with obsessive-compulsive disorder (OCD). The control group comprised a sample of 37 healthy subjects without neurological or psychiatric conditions. Participants in the SPD sample were patients from a mental health institute in the south of Mexico City. Diagnoses were established by psychiatrists according to DSM-IV (American Psychiatric Association [APA], 1994) and DSM-5 (APA, 2014) diagnostic criteria and patients were symptomatically stable and adherent to pharmacological treatment at the time of evaluation. Diagnoses were cross-verified to ensure comparability across DSM-IV and DSM-5 criteria. Subjects in the control group were recruited by invitation to participate in this research and did not present neurological or psychiatric conditions.

Measurements

The Wechsler Adult Intelligence Scale (WAIS) (Wechsler, 1973) and the Wechsler Adult Intelligence Scale-III (WAIS-III) (Weschler, 2003). These scales were designed to measure the intelligence quotient (IQ) of adults aged between 16 and 80. They consist of two scales (verbal and performance), each containing more specific subtests which, in turn, comprise items organized by increasing level of difficulty. Both scales share verbal and performance subtests. The verbal subtests are 1) Information, which explores the subject's general knowledge; 2) Comprehension, which evaluates the subject's logical and conventional judgment in solving hypothetical social problems and is related to the ability to appraise and understand social situations and norms; 3) Arithmetic, which measures concentration and numerical skills as well as problem-solving through numerical operations; 4) Digit Span, which assesses attention-concentration as well as immediate memory; 5) Similarities, which measures the ability to abstract, conceptualize, and generalize, as well as the type of thinking: concrete, functional, or abstract; and 6) Vocabulary, which measures the subject's linguistic repertoire and general language proficiency. The performance subtests are 1) Picture Arrangement, which evaluates visual organization, sequential thinking, common sense, and causal relationships in hypothetical socio-affective situations; 2) Picture Completion, which assesses visual organization and concentration as well as the ability to discriminate between essential and non-essential elements; 3) Block Design, which measures visuomotor coordination, visuospatial perception, and the ability to analyze and synthesize visually; 4) Object Assembly, which measures visuomotor coordination, planning, and visual synthesis ability; and 5) Symbol Search, which evaluates learning ability, visual memory, visuomotor coordination, and psychomotor speed. Both the WAIS and WAIS-III were used based on their shared core of 11 subtests, which formed the basis of the factorial model analyzed in this study.

Procedure

For the SPD group, the assessment instruments were administered and scored by neuropsychologists specializing in the evaluation of patients with psychiatric disorders during the period 2014-2024. The control group was evaluated by seventh semester psychology students from a university in Mexico City. The evaluations were conducted during four weekly one-hour sessions for the patients and two weekly one-hour sessions for the control group. They were conducted on the days the patients attended the outpatient clinic at the mental health institute. The tests were scored, and the standardized test scores tabulated in Excel for subsequent statistical analysis.

Statistical analysis

All statistical tests were performed using the Statistical Package for Social Sciences (SPSS),version 22.0 (IBM Corp., 2013). The normal distribution of the sample was analyzed using the Kolmogorov-Smirnov test and Levene's test of homogeneity of variance. Frequency analyses and descriptive statistics were also performed for the sociodemographic data. The 4-factor model as reported in the Allen and Barchard (2009) study was evaluated with a CFA using AMOS SPSS version 22.0 (IBM Corp., 2013), including the 11 subscales shared by the WAIS and WAIS-III. This 4-factor model included the factors of verbal comprehension,

perceptual organization, working memory and social cognition. Confirmatory factor analysis (CFA) is a statistical technique used to analyze the degree to which a set of theoretically organized factors matches the data (Martínez & Sepúlveda, (2012). The following fit indicators were analyzed: a) chi-square (χ^2) less than 5, b) a comparative fit index (CFI) equal to or greater than .95, c) a goodness-of-fit index (GFI) equal to or greater than .90, and d) a root mean square error of approximation (RMSEA) equal to or less than .05 (Browne & Cudeck, 1993; Hu & Bentler, 1999). In addition, a multivariate analysis of variance (MANOVA) was performed to evaluate the effect of the groups on various dependent variables (the verbal comprehension, perceptual organization, working memory and social cognition factors), with a priori Bonferroni contrasts considering a significance level of $p < .05$.

Ethical considerations

Procedures were approved by the National Institute of Psychiatry Ethics and Research Committee, permit No. 2330. All participants read and signed a consent form before completing the assessment. They were not required to provide confidential data such as addresses or telephone numbers and were informed they could drop out of the study or stop answering the questions at any time.

RESULTS

The normal distribution of the sample and homogeneity of variance were confirmed for the statistical analyses. The socio-demographic characteristics of the sample are presented in Table 1. The sample of patients with SPD consisted of 291 subjects. The group of patients diagnosed with schizophrenia (SZ) included 28 women (M = 33.90 years, SD = 12.16) and 43 men (M = 31.58 years, SD = 11.82). The group of patients diagnosed with bipolar disorder (BD) included 65 women (M = 31.12 years, SD = 14.06) and 33 men (M = 32.88 years, SD = 14.90). The group of patients diagnosed with major depressive disorder (MDD) consisted of 45 females (M = 32.64 years, SD = 11.41) and 22 males (M = 34.41 years, SD = 13.13). The group of patients diagnosed with obsessive-compulsive disorder (OCD) included 31 women (M = 34.25 years, SD = 12.54) and 24 men (M = 32.17 years, SD = 11.89). The control group sample consisted of 37 subjects, including 25 women (M = 35.65 years, SD = 11.68) and 12 men (M = 36.50 years, SD = 10.12).

Confirmatory Factor Analysis (CFA) demonstrated significant, high factor loadings ($p < .05$) ranging from.48 to .88. The model showed a four-factor factor structure supported by statistical goodness-of-fit indicators (χ^2 (34) = 61.30, p = .003), a Comparative Fit Index (CFI) of .98, a Goodness-of-Fit Index (GFI) of .96, a root mean square error of approximation (RMSEA) of .04 and an Akaike Information Criterion (AIC) of 125.30. The RMSEA of .04 and CFE of .98 indicate excellent model fit, supporting the robustness of the four-factor structure.

Table 1
Sociodemographic data of sample (N = 328)

Variable	*SMD N = 291*	*Control N = 37*
Average age	30.96 (12.62)	35.96 (12.62)
Sex		
Men	122 (41.92%)	12 (32.43%)
Women	169 (58.08%)	25 (67.57%)
Education		
Elementary	33 (11.38%)	0
Middle school	56 (19.24%)	3 (8.11%)
High School	94 (32.30%)	12 (32.43%)
Bachelor's degree	105 (36.08%)	22 (59.46%)
Occupation		
Employee	86 (29.55%)	22 (59.46%)
Unemployed	81 (27.84%)	4 (10.8%)
Homemaker	49 (16.84%)	6 (16.22%)
Student	71 (24.40%)	5 (13.51%)
Diagnosis		
SZ	71 (24.40%)	-
BD	98 (33.68%)	-
MDD	67 (23.02%)	-
OCD	55 (18.90%)	-

Note. SMD = Severe mental disorder, *SD* = standard deviation, *SZ* = schizophrenia, *BD* = bipolar disorder, *MDD* = major depressive disorder, *OCD* = obsessive-compulsive disorder.

Multivariate effects (MANOVA) were observed for the Verbal Comprehension (VC), Perceptual Organization (PO), Working Memory (WM) and Social Cognition (SC) factors (Pillai's trace: F = 3.42 (16), $p < .001$), between the patient and control groups. The results of this analysis are shown in Table 2 with a priori contrasts. Statistically significant differences were observed in all factors of the model. For the Verbal Comprehension (VC) and Perceptual Organization (PO) factors, the SZ group showed significant differences from the BD and control groups (F = 3.78 (4), p = .005). The MDD and OCD groups had lower scores than the control group in the Verbal Comprehension (VC) factor (F = 8.93 (4), p = .001). In the Working Memory (WM) factor, the SZ, MDD and OCD groups presented lower scores than the BD and control groups (F = 8.04 (4), p = .001). Finally, in the Social Cognition (SC) factor, it was observed that all the SPD groups exhibited significantly lower scores than the control group (F = 7.22 (4), p = .001). The BD group showed no significant differences in the Verbal Comprehension (VC), Perceptual Organization (PO) or Working Memory (WM) factors compared to the control group.

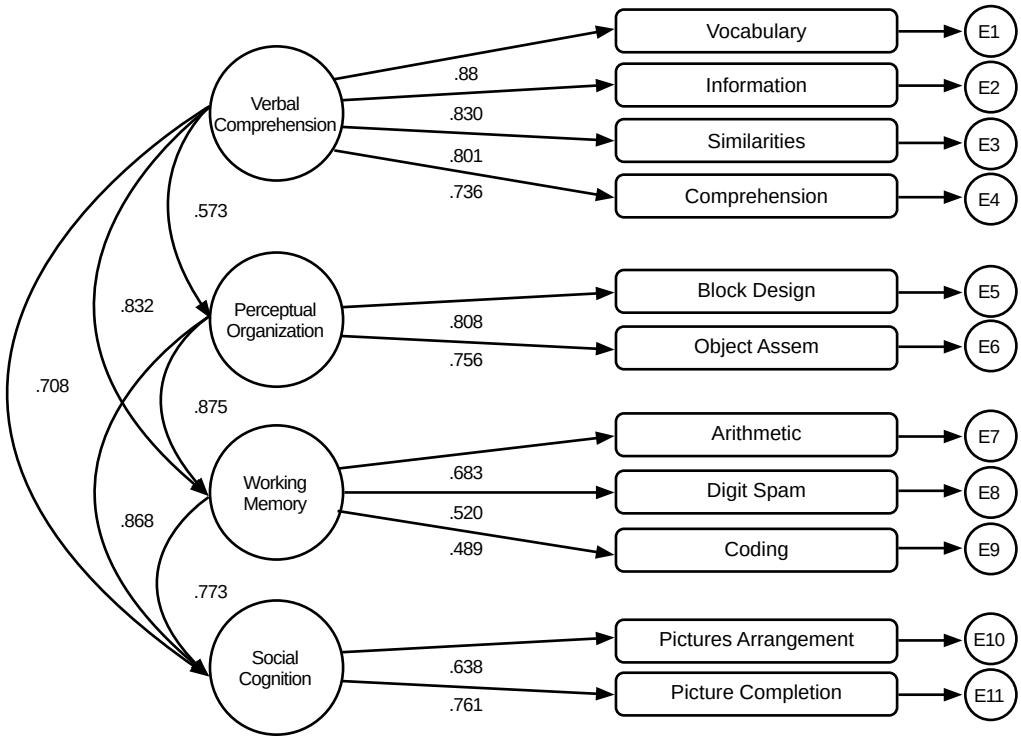


Figure 1.

Source: Compiled by the authors.

Note: All structural coefficients and measured factors were significant * $p < .05$. Goodness-of-fit indicators: χ^2 (34) = 61.30, p =.003, *RMSEA* = .04, *CFI* = .98.

Table 2

Comparison of VC, PO, WM and SC factors in SMD and control groups with MANOVA

Factor	*Group*	*Mean*	*SD*	*F*	*p*	*Significant Post Hoc p < .05*
VC	SZ	45.24	10.71	8.93	.001*	SZ < BD, CTL
	BD	51.22	9.41			
	MDD	47.51	10.81			MDD < CTL
	OCD	47.49	8.99			OCD < CTL
	CTL	55.92	9.40			
PO	SZ	16.31	4.93	3.78	.005*	SZ < BD, CTL
	BD	18.70	5.26			
	MDD	17.46	5.38			
	OCD	18.02	4.78			
	CTL	19.86	5.15			
WM	SZ	23.97	5.80	8.04	.001*	SZ < BD, CTL
	BD	27.08	6.38			
	MDD	24.09	5.76			MDD < BD,CTL
	OCD	25.02	6.72			OCD < CTL
	CTL	29.70	5.26			
SC	SZ	17.30	3.75	7.22	.001*	SZ < CTL
	BD	18.89	4.64			BD < CTL
	MDD	17.60	4.44			MDD < CTL
	OCD	18.98	3.91			OCD < CTL
	CTL	21.57	4.46			

Note: * Significant, *SZ* = schizophrenia, *BD* = bipolar disorder, *MDD* = major depressive disorder, *OCD* = obsessive-compulsive disorder, *CTL* = control, *SD* = standard deviation.

DISCUSSION AND CONCLUSION

The aim of the present study was to identify the Social Cognition (SC) factor in a sample of SPD patients using the WAIS and WAIS-III subtests with CFA and to compare the model factors in the SPD groups. The CFA of the 11 subtests shared by the WAIS and WAIS-III supported a four-factor model comprising the Verbal Comprehension (VC), Perceptual Organization (PO), Working Memory (WM) and Social Cognition (SC) factors. The Social Cognition (SC) factor comprised the Picture Arrangement (PA) and Picture Completion (PC) subtests. To our knowledge, this is the first study to identify the Social Cognition (SC) factor for the subscales shared by the WAIS and WAIS-III in patients with SPD. It is also one of the few to have used factor analysis to identify this construct as a separate factor from non-social verbal and visuospatial cognitive processes in this population. It should be noted that it had previously been identified using CFA in patients with schizophrenia (Allen et al., 2007) and autism spectrum disorder (ASD) (Goldstein et al., 2008). However, it had not yet been identified in a broader sample of patients with SPD that included conditions such as BD, MDD and OCD. This is relevant as it validates the use of factor analysis for the WAIS and WAIS-III subtests in clinical contexts.

As discussed earlier, the Social Cognition (SC) factor in this study comprised two subtests with social content. Each of them had relatively high loading for the SC factor (> .60). This factor loading, together with adequate model fit, support the construct validity of the SC factor gauged with WAIS and WAIS-III. This is significant because in the most recent versions of the Wechsler scales, such as the WAIS-IV (Wechsler, 2012), the Picture Arrangement subtests have been removed, while new subtests such as Visual Puzzles, Figure Weights, and Cancellation have been added. These new subtests examine the ability to analyze and synthesize abstract visual stimuli, nonverbal reasoning, quantitative reasoning, and processing speed. We therefore consider that the removal of the Picture Arrangement subtest in the WAIS-IV could limit the assessment of certain aspects of social cognition. These include visual sequencing of social events, which are extremely useful in both clinical and forensic settings (Nestor et al., 2010; Nestor et al., 2013).

Assessing the Social Cognition (SC) construct with the WAIS and WAIS-III Picture Arrangement (PA) and Picture Completion (PC) subtests allows us to evaluate the social perception and social cognition domains within the Social Cognition (SC) construct. These domains have not been the specific assessment target of other instruments to gauge theory of mind, emotional perception, and attributional bias. Examples include the Reading the Mind in the Eyes Test (RMET), the Facial Emotion and Identification Test (FEIT), the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT), the Emotion Processing Test, and the Ambiguous Intentions Hostility Questionnaire (AIHQ) (Vlad et al., 2018).

According to Allen et al., (2007) and Green et al., (2005), the picture arrangement and picture completion subtests require the analysis of simple line drawings representing social situations, people and objects and the identification of specific details. The social content of the picture arrangement and certain details of the picture completion subtest require knowledge of common social situations. The social construct consisting of the picture arrangement and completion subtests therefore comprises the domains of social perception and social knowledge that interact closely to understand social situations and interpret socio-affective signals.

It would be interesting for future research to examine the results obtained in Social Cognition (SC) assessment instruments including this construct with the WAIS and WAIS-III subtests. This would enhance the understanding of the integrity or impairment of social cognitive processes in patients with psychiatric conditions. who may perform adequately in certain Social Cognition (SC) domains yet experience severe impairment in social functioning. This could be due to impaired skills in other social cognition domains depending on the specific situational demands as well as the chronicity or evolution of the condition (Allen et al. , 2007). The results of this research support the proposal of Allen et al., (2007), Nestor et al., (2010), and Castañeda et al., (2009). These authors suggest using the Wechsler scales to study social cognition in patients with psychiatric disorders with the Comprehension and Picture Arrangement subtests that can be used in neuropsychological settings.

This study provided additional information by comparing the scores of the Verbal Comprehension (VC), Perceptual Organization (PO), Working Memory (WM), and Social Cognition (SC) factors between the SPD groups and a control group. Scores obtained in the Social Cognition (SC) factor were significantly lower in all four clinical groups, SZ, BD, MDD, and OCD, compared to the control group. They were also significantly lower than the scores obtained in the verbal comprehension, perceptual organization, and working memory factors. These findings suggest that the Social Cognition (SC) factor may be sensitive to neurocognitive deficits across clinical groups. Neuroimaging techniques used to explore Social Cognition (SC) in various neuropsychiatric disorders provide evidence associating the activity and dysfunction of the orbital prefrontal network with the amygdala and dorsal cingulate gyrus. This has been observed in both healthy subjects and patients with autism, depression, schizophrenia and post-traumatic stress disorder (Grady & Keightley, 2002; Salehinejad et al., 2021). It has been corroborated by studies using these techniques and the WAIS Picture Arrangement and Comprehension subtests, which have observed the same brain structures involved in Social Cognition (SC) processes (Nestor et al., 2010; Nestor et al., 2013). Future lines of research should investigate the relationship between the Social Cognition (SC) construct assessed with the WAIS and WAIS-III and the results of neuroimaging studies in various psychiatric

disorders to broaden the picture. It would also be useful to design and explore the effect of specific interventions for social cognition, a crucial aspect for the well-being and social integration of these patients.

Limitations of this study include the following. First, we did not assess the relationship of the model factors with behavioral, functional evaluations of daily life or quality of life to determine the relation with psychosocial disability in SPD. Second, we did not undertake a qualitative analysis of the stories patients can create when interpreting the Picture Arrangement subtest. This would have enabled us to identify specific failures such as the type of confabulations or overinterpretations between different SPD, since patients do not interpret social situations in the same way (Green et al., 2015; Lee et al., 2013).

In conclusion, this study highlights the importance of using validated instruments such as the Wechsler scales (WAIS and WAIS-III) to evaluate social cognition in clinical settings. It underlines the need to include the assessment of this construct in neuropsychological test batteries. It stresses the value of researching the social cognition construct assessed with WAIS and WAIS-III in patients with other types of pathologies such as personality disorders, neurodevelopmental disorders and psychopathy. Finally, it is important to consider this type of results in the development of specific rehabilitation strategies that could facilitate effective social reintegration.

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Conflicts of interest

The authors declare they have no conflicts of interest.

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Symptomatology and Pharmacological Treatment in Bipolar Disorder: Perceptions of patients, families, and health professionals

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ABSTRACT

Introduction. Bipolar disorder is a chronic mental condition requiring drug treatment for symptom control. Challenges include ensuring medication adherence and maintaining mood stability. **Objective.**Understand the perceptions and learning needs of people diagnosed with bipolar disorder and those of their families and mental health professionals regarding its symptoms and treatment. **Method.** Qualitative study with a person-centered approach, conducted at three mental health facilities in a municipality in the state of São Paulo, Brazil. The sample consisted of ten people with bipolar disorder, nine family members, and 36 mental health professionals. Five discussion circles were conducted at each facility to obtain data from patients and family members, with individual interviews being conducted with health professionals. All groups and interviews were recorded and subsequently transcribed and analyzed in keeping with the content analysis technique proposed by Bardin. **Results.** The analysis yielded four themes and 13 sub-themes. The first theme was perceptions regarding the bipolar disorder experience: understanding the cycles of the disorder; ideation and suicide attempts; and financial impulsivity. The second concerned perceptions regarding medication use: difficulty finding the right medication dose and adverse reactions; benefits of medication; problems with treatment adherence. The third involved perceptions regarding interpersonal relationships: perception of the relationship with the health professional, the family and occupational performance. The fourth encompassed the use of non-pharmacological therapeutic strategies: leisure activities; religiosity; psychotherapy and physical activity. **Discussion and conclusion.** This study provides evidence that mood diaries, psycho-education, and suicide prevention strategies are useful interventions for clinical practice.

Keywords: Bipolar disorder, pharmacological therapy, affective symptoms, mental health, qualitative research.

RESUMEN

Introducción. El trastorno bipolar es crónico y el tratamiento farmacológico es esencial para controlar los síntomas. La adherencia a la medicación y el mantenimiento de la estabilidad del estado de ánimo son un desafío. **Objetivo.** Comprender las percepciones y necesidades de aprendizaje de las personas diagnosticadas con trastorno bipolar con respecto a los síntomas y el tratamiento farmacológico desde su perspectiva y la de familiares y profesionales de la salud mental. **Método.** Estudio cualitativo con enfoque centrado en la persona, realizado en tres servicios de salud mental de un municipio localizado en el estado de São Paulo, Brasil. La muestra estuvo compuesta por diez personas con trastorno bipolar, nueve familiares y 36 profesionales de la salud. En cada servicio se realizaron cinco grupos de discusión para recoger datos de pacientes y familiares y se realizaron entrevistas individuales a profesionales sanitarios. Fueron grabados y posteriormente transcritos y analizados según el análisis de contenido propuesto por Bardin. **Resultados.** La información identificó 4 temas y 13 subtemas. Percepciones sobre la experiencia del trastorno bipolar: comprensión de los ciclos del trastorno; ideación e intentos suicidas; gestión impulsiva de las finanzas. Percepciones sobre el uso de medicamentos: dificultades de adaptación y reacciones adversas; beneficios de los medicamentos; Dificultades en la adherencia. Percepciones de las relaciones interpersonales: percepción de la relación con el profesional de salud, la relación con la familia y el desempeño ocupacional. Utilización de estrategias terapéuticas no farmacológicas: actividades de ocio; religiosidad; psicoterapia; actividad física. **Discusión y conclusión.** Este estudio proporciona evidencia de que el diario del estado de ánimo, la psicoeducación y la conducta suicida son intervenciones relevantes para la práctica clínica.

Palabras clave: Trastorno bipolar, terapia farmacológica, síntoma afectivo, salud mental, investigación cualitativa.

INTRODUCTION

Bipolar disorder (BD) is a chronic mental health condition associated with functional and cognitive impairments, characterized by recurrent shifts between extreme depression and extreme mania or hypomania. Its treatment is determined by the mood phase of the patient.

BD is one of the most disabling mental disorders. According to the Global Burden of Disease Study 2000–2012, it is the sixth leading cause of disability in men and the third leading cause of disability in women (World Health Organization, 2014). Adequate care of the patient and their family, with consistent information on the disorder, systematic follow-up and comprehensive treatment shared with the health team, can facilitate intervention and treatment adherence. This in turn can directly affect their quality of life, interpersonal relationships, and autonomy (Sakurai et al., 2020).

Medication is crucial to treatment, particularly for acute episodes of BD and the prevention of their recurrence. Adherence is a major challenge, with low patient adherence being associated with increased relapses, suicide and suicide attempts, emergency room visits, hospitalization, health costs, homelessness, and encounters with the law (Inder et al., 2019; Jawad et al., 2018).

Medication adherence involves three phases: beginning treatment, implementing or following the dosage regimen, and continuing treatment. Several factors and behaviors influence each phase, including patient attitudes towards medication, clinical symptoms, adverse reactions, medication regimen complexity, health literacy, substance misuse, medication costs, and forgetfulness (Jawad et al., 2018).

It is estimated that between 10% and 66% of BD patients fail to take their medication as prescribed, with adherence often changing over time (Ligam, Scott, 2002; Jawad et al., 2018). Factors such as female gender, younger age, low socioeconomic status, and low therapeutic alliance appear to be risk factors for non-adherence to BD medication (Steardo Jr et al., 2020).

The way psychiatric drugs have been prescribed can lead to low user participation. For example, if a patient is only asked to describe their symptoms and accept their medication, this can contribute to low adherence. This points to the need to encourage changes in attitude regarding the engagement of individuals in the health care process (Sade et al., 2013).

Patients with BD have an enormous responsibility to self-manage to prevent relapse or recurrence. The growing interest in clinical practice and scientific literature has made person-centered care crucial to the care of those with BD, through an approach focusing on the individual's self-determined goals in regard to health interventions or the lack thereof. The patient guides the care process, based on their values, preferences, and personal needs (McMillan et al., 2013; McKay et al., 2021).

The concepts of agreement, patient-centered care, and shared decision-making are based on the principles of collaboration, responsiveness, open communication, and mutual agreement regarding treatment between patients and health professionals (Zisman-Ilani et al., 2017; Morant et al., 2016). This can guide the drug treatment of people with BD, particularly during periods of remission, encouraging adherence.

The complexity of BD and the difficulty of ensuring patient adherence with the attendant readmissions and suicide risk require studies on the perspectives of patients, caregivers, and health professionals involved in the treatment process. This would enhance person-centered care for those with BD. The aim of this study was therefore to understand the perspective of patients diagnosed with BD regarding their symptoms and treatment, as well as that of their families and mental health professionals.

METHOD

Study design

This is a qualitative study, as it enables research to be conducted on the lived experiences of patients by studying their relationships in their natural environment. One of the main techniques used in qualitative studies is the person-centered approach, adopted as the theoretical reference for this study. This approach is based on the belief that every individual has an innate potential for growth and positive development. The focus is on creating a safe, welcoming therapeutic environment where the client feels understood, accepted, and valued, enabling them to explore their own experiences, emotions, and needs, and find their own solutions to their challenges (Ventura et al., 2022).

Participants

The study was conducted at three mental health facilities in a municipality in the state of São Paulo, Brazil: the Mood Disorders Outpatient Clinic at a general hospital and two psychosocial care centers (PCC), one PCC II and one PCC III.

The study population consisted of patients diagnosed with BD, who received periodic care at the mental health facilities under study, their relatives, and the health professionals attending them. Inclusion criteria for patients were being 18 or older, taking medication, having a BD diagnosis, and receiving regular treatment at the facilities. Inclusion criteria for relatives were being 18 or older and being mentioned as the person with BD as the primary family member involved in their treatment. Communication difficulties were an exclusion criterion for patients and family members. In the case of health professionals, inclusion

criteria were being 18 or older and having attended the facility for a minimum of six months. Those who were on vacation or had a leave of absence were excluded. The sample comprised 10 people with BD, nine family members, and 36 mental health professionals.

Procedure

Five discussion circles with patients and their families were held at each study site by the study's principal investigator and an assistant researcher to collect data. The researchers visited the study sites on the days when the patients had appointments and the first patients were invited face-to-face to attend, until seven had been obtained for each circle. Those who agreed to participate in the survey were asked to mention the primary family member involved in their treatment. This family member was invited to participate in the research by telephone. The circles, held in a suitable room at weekly intervals, had an average duration of one hour and none of the patients refused to take part in the study.

The recording was transcribed and analyzed after the first discussion circle to obtain a summary of the main aspects discussed. This summary was presented to the participants of the following circles (power point) to support the discussions. This procedure was followed in all the discussion circles.

All the health professionals working at the study sites were subsequently invited to take part in the research. All the interviews were scheduled in advance so as not to interfere with the activities undertaken at the study sites, and guided by the summaries obtained from the discussion circles with the patients and their families. After receiving the summary from the discussion circles, the researchers asked the initial guiding question: "Is there any additional content that you consider relevant?"

The focus groups were conducted by the female lead researcher (MD) and a male assistant researcher (MD), both trained PhD students. The participants did not have any information on them and no characteristics of the researchers were provided.

These discussion spaces were based on Gaining Autonomy & Medication Management in Mental Health (GAM), designed to encourage user autonomy in relation to their treatments.

GAM consists of an innovative mental health care management strategy promoting the existence of a "conversation space," a space for expression and decision-making on medication, providing new meanings for the unique experiences of using psychotropic drugs.

The script guiding the dialogue and problematizing medication use became more flexible as the discussions evolved. It was initially divided into axes: management capacity and sharing decisions; user rights, especially regarding medication (access, information, refusal); use of psychiatric medication in relation to users' autonomy and rights; and the experience of using medication.

In addition, a pilot study was conducted to determine whether the content and form of the script would make it possible to meet the proposed objective. No changes were made to the script after the pilot study.

Analysis

All the discussions were recorded and subsequently transcribed, coded line by line and analyzed using the content analysis technique proposed by Bardin (2016).

The discussion circles were based on the Canadian approach entitled "Gaining Autonomy & Medication Management in Mental Health" (GAM), translated and adapted in Brazil (Gonçalves, 2013). GAM is based on an appreciation of the subjective quality of life, (re-) appropriation of power, consideration of the meanings of medication, respect and wide-ranging care of suffering, and getting better (Nascimento, 2012). The script guided the dialogue and the problematization of the use of medicines and became more flexible as the discussions evolved.

Individual interviews with health professionals were subsequently conducted and recorded. Interviews were guided by the summary obtained from the discussion circles with people with BD and their family members. GAM allows for a better understanding of patients' experience, their rights and psychiatric treatment; a reduction or elimination of sudden interruptions in treatment without follow-up, and contributes to a perception of greater control over their treatment. It contributes to the understanding of their inner experience and lives; improvements in the relationship between professionals with room for negotiation; and changes in prescriptions, which impacts well-being, quality of life in the community, and recovery.

Content analysis took place in three stages: 1) pre-analysis, 2) exploration of the material and 3) treatment of the results, inference, and interpretation. The organization of the data and analyses shed light on the learning needs of people with TB regarding the symptoms of the disorder and drug therapy. It revealed their perspective, as well as those of family members and mental health professionals.

Data saturation was determined by theoretical saturation. This means that when no new elements were found to support the desired (or possible) theorization, they were no longer extracted from the field of discussion.

Ethical considerations

The research was approved by the Research Ethics Committee (CAAE 88956518.6.0000.5393). All participants signed an Informed Consent Form. This procedure is designed to comply with the provisions of Resolution No. 466 of December 12, 2012, of the National Health Code. The

study was conducted in accordance with the World Medical Association's International Code of Ethics (Declaration of Helsinki). Participants were informed that their information would be kept confidential and that they could drop out of the study at any time, without being penalized. They were also informed of the study's objectives and the fact that the data obtained would be used to prepare a scientific paper, which would subsequently be published.

RESULTS

Ten people with BD and nine caregivers participated in the study, which revealed the difficulty of adherence in people with BD and their caregivers to the proposed groups.

The people with BD who agreed to participate in the survey were female (60%), white (60%), high school graduates (50%), aged 50 to 59 (40%), married (40%), evangelical (40%), with incomes of up to one minimum wage (40%), unemployed (30%), and retired (30%). A total of 77.8% of family members were female including two partners/wives, a mother, daughter, sister, aunt, mother-in-law, and two partners/husbands.

Five nurses, three nursing technicians, six nursing assistants, ten doctors, six psychologists, four social workers, and two occupational therapists participated in the study. Most of the health professionals were female (63.9%), were only employed at the facilities (58.3%), and worked 20 to 30 hours a week (77.8%). They had worked up to 10 years in the area (55.5%) and at the facility (77.8%), specialized in mental health (52.7%), were in the 30-to-39-year age range (47.2%), and had completed 11 to 20 years of training (47.2%).

Analysis of the information obtained in the discussion groups and interviews based on the person-centered approach yielded four themes and 13 sub-themes. The accounts of the study participants will be used to clarify the content covered in each theme/subTheme (Table 1).

Table 1
Theme definitions obtained in discussion groups and interviews based on the person-centered approach. Ribeirão Preto - São Paulo - Brazil, 2024

Themes	*Definitions*
Perceptions regarding the BD experience	Expresses the difficulties of recognizing symptoms and cycles, the experience of suicidal ideation and suicide attempts, and financial impulsivity
Perceptions regarding drug use	Presents the adverse reactions to the drugs prescribed for treating BD, difficulties of finding the appropriate drug use and maintaining long-term drug treatment, symptom remission, and reducing seizures/hospitalizations as a benefit of the drug
Perceptions regarding interpersonal relationships	Reflects the experience in the dialogue with the mental health professional, difficulties associated with social separation, and stigma from family members, members of one's social circle, and in the work context
Use of non-pharmacological therapeutic strategies	Expresses the importance of leisure activities, religiosity, psychotherapy, and physical activity, emotional support, physical well-being, and understanding and controlling the symptoms of the disorder

Note: Information prepared by the authors.

Theme 1: Perceptions regarding the BD experience

Understanding the cycles of the disorder. Participants verbalized the impact of the illness on their lives, losses, and difficulties, especially during mania, hypomania, and psychosis episodes. They highlighted the difficulty of recognizing the symptoms, characteristics, and cycles of the disorder, accessing consistent information and the limitations in professional support.

> If I'm in the euphoric phase, I don't even care about the meds... And those brilliant ideas that I had before dawn, I wanted to write a book these days, it was brilliant, it was a dream that I had, I said I'm going to write this, I'm going to make a book. I was very euphoric that day! (Patient 2, Outpatient)

> Onlookers do not think that deep down there is something very serious, it is as if there were a bomb about to explode, you always have that fear... (Patient 3, Family Member, PCC III)

> I think it is crucial for a person to understand this illness... understand that it is an illness…and what happens with this illness. (Patient 9, PCC II)

Suicidal ideation and suicide attempts. People with BD reported their experiences with episodes of suicidal ideation and suicide attempts. They attributed their suicidal behavior to the desire for relief from the "pain in their soul" and the experience of feeling "on edge." Mental health professionals stressed the need for a broad approach to mental disorders and suicide and the limited dissemination of this issue in health services, including those specializing in mental health.

> When you start thinking about suicide, you take five tablets, then you sleep...(Patient 3, PCC II)

> I've already had suicidal ideation and I've been hospitalized because of it... when I planned to buy a gun and kill myself and other people. (Patient 2, Outpatient)

> The suicidal man attacks his own life because he wants to stop the pain he feels... I went through this (Patient 3, PCC III)

> I tried suicide twice; I have an experience... I think whoever commits suicide has reached their limit. (Patient 1, PCC III)

> You don't see anything inside a PCC, a banner, or a folder on mental disorders, depression, suicide, or suicide prevention. I think this should be done nationally, because nowadays. suicide is the second largest cause of death among young people aged 18 to 35. (Doctor 23, PCC III)

Impulsive administration of finance. Participants reported difficulties with financial issues arising from impulsivity.

They highlighted poorly planned business endeavors, excessive, unnecessary spending, which resulted in debt and the sale of the goods, especially during the manic phase.

> He wanted to sell our house, he wanted to buy a truck, he wanted to set up a company and he couldn't get it out of his head and he went to the bank to take out a loan (Patient 2 Family Member, Outpatient)

> I sold my house, I sold my car, I sold everything... I lost basically everything, everything, everything, because a lot of people used my illness to get things out of me. (Patient 3, PCC II)

> They have a lot of issues with loans they usually take out when they are in the mania phase and have an impulse, and these loan companies offer loans to everyone. There are some who even request interdiction, to be free of these loans, there is a strategy that even lawyers use. (Psychologist 26, PCC II)

Theme 2: Perceptions regarding drug use

Difficulties of adequacy and adverse reactions. The participants addressed the difficulty of tolerating the side effects of drugs used to treat BD, emphasizing the difficulty of expressing themselves, weight gain, drowsiness, and muscle tightening. They pointed out the difficulty of achieving the correct drug therapy which, for some people, requires constantly changing drugs, after weighing up their risks and benefits.

> I get very stuck and had difficulty articulating words. I had too much sleep, and a lack of energy, and I gained a lot of weight on the medication. (Patient 1, PCC III)

> We live in a constant struggle... it's medicine to wake up, it's medicine to sleep. (Patient 2 Family Member, Outpatient)

> It took me a long time to get my medication right... I only adapted after going through 23 antidepressants. (Patient 3, Outpatient)

Benefits of using medicine. The participants' reports showed the perception of the benefits of the drugs, with an emphasis on mood stabilization, relapse prevention, hospitalizations, suicidal ideation, and psychosis, despite the side effects, especially at the beginning of treatment.

> I've been on treatment for about two years, the medicine helps me not to freak out. Because what I have learned is that there are moments of sadness, moments of joy, and moments of euphoria... the medicine helps you hang on, and not go back and forth, back and forth... (Patient 3, PCC III)

> we know that medicine is essential... it is something that provides benefits but also side effects, but side effects we can deal with (Patient Family member 1, PCC II)

Difficulties with adherence. Participants reported medication non-adherence, whether unintentionally (forgetfulness) or intentionally to interrupt or decrease its use in the presence of symptom improvements or in combination with other psychoactive substances. They also indicated the occurrence of non-adherence especially in the mania phase and due to the perception of excessive use of drugs and doubts concerning their benefits.

> During euphoria, the person does not accept the medicine at all. The problem is that if you feel that improvement, you stop taking the medicine... it's a cycle. (Patient 1 Family Member, PCC II)

> I already stopped taking the medicine for a week. This medication business has already left me in doubt: why do I take so much medication? I was not born taking this, now all the doctors say that you have to take the medication, there are controversies." There are people in the group who say: today I will stop taking medicine so I can drink. (Patient 2, Outpatient)

> When the patient improves, he thinks that he is fine, that he no longer needs to take the medication. So, I think that something that would encourage the patient to continue the medication even when they were euthymic would be useful, because when they relapse it is very dangerous because it increases the risk of both suicide and exposing themselves to dangerous situations. (Doctor 4, Outpatient)

Theme 3: Perceptions regarding interpersonal relationships

Perception regarding the relationship with the health professional. Participants reported both experiences of facilitated and open communication with health professionals, especially at times of crisis, and the experience of not having their perspective valued by them. Moreover, confidence in the health professional and the availability of consistent information regarding the disorder, symptomatology, and treatment were cited as essential for the continuity of care, which requires the involvement of a multi-professional team.

> I had a panic attack two weeks ago and I was able to get in touch with my psychiatrist, and she mentored me, and gave me full assistance, at half past eleven at night. Who can do that these days? She reassured me. I also asked, 'Doctor, do I really need to take this medicine? There's no way to lower the dose?' She said, 'In my view, this dose cannot be changed for now.' I have to trust the professional, or else I'll drop out of treatment. (Patient 2, Outpatient)

> I was referred to a PCC and a funny thing happened because a doctor was treating me and I said: I do not want to be seen by you. Because she began asking my family what was going on. I said: instead of asking me, you're asking them. Despite being a psychiatrist, she never told me that I could not drink so I drank, I drank beer, I took depakene, I took quetiapine. (Patient 1, Outpatient)

> The one who found out he was having hormone problems was the psychologist. Can you believe that? He was seeing three doctors. (Patient 2 Family Member, Outpatient)

Perception regarding the relationship with the family. Social estrangement and stigma by family members and people from the social circle were reported by people with BD. Interdiction, at the request of the family, was listed as harmful to the social functioning of the person, preventing the individual from expressing his own will. Both the participants and health professionals underlined the importance of family support and knowledge regarding the characteristics of the disorder to understand the patient's experience.

> The greatest pain you have is when your family brushes you aside, throwing you away as if you were disposable. (Patient 3, PCC II)

> The family must begin to understand that it is not just any matter, it really is an illness. The family has to really know the diagnosis and be informed of this kind of thing. (Patient 1, Outpatient)

> You interdict a person thinking about their rights, and you take away their rights entirely. That's what was going to happen to me. I would not have been able to sign my name ever again. Thank God, she (family member) did not get the interdiction. I like to be useful! If there's one thing I value, it's my rights. (Patient 2, Outpatient)

> One thing that I think is very important, that helps the patient a lot is the support of the family. But how can the family provide support if they do not understand how the illness this person has works? There are many people who sometimes do not understand due to the lack of information. Of course, some don't even care. (Nursing technician 11, Outpatient)

Perceptions regarding occupational performance. Participants described experiencing stigma in the work environment and losses in occupational functioning, with an accompanying loss of value and motivation to work. They also highlighted the difficulty in the Brazilian Social Security system of being able to retire due to disability or sickness.

> Companies do not accept that you get sick. While you are productive, everything's fine, if you stop being so, you are just a number in the company. That's what happened to me. (Patient 1, Outpatient)

> You arrive and your workmates and that old joke: "Ah. have you taken your medication today?" So, you quit your job, you quit everything, because it only causes you harm. (Patient 3, PCC II)

> I have already thought about working, but I think if I go back to work and have a crisis, I will go back to being on leave like I was three, four years, away and back. I am retired due to disability. (Patient 2, Outpatient)

> Every day, I treat people who are trying to get leave. There are people we tell, "This one I'm sure you will get, because you need it, the diagnosis is compatible. And it doesn't work! Sometimes the one you think has no chance, goes and gets it." (Nurse 33, PCC III)

Theme 4: Use of non-pharmacological therapeutic strategies

Leisure activities. Participants reported the importance of leisure activities to control symptoms. They mentioned walking in shopping malls and parks, observing nature, cooking, manual activities, such as crocheting, looking after animals and plants, breathing techniques, and music.

> Being able to cook is already a therapy and helps with your food re-education. Strolling in the shopping mall is good, you know. (Patient 2, Outpatient)

> I know all the parks. I sit there watching nature. (Patient 1, PCC II)

> Where I find support is the computer, crocheting, pets, and indoors. (Patient 3 - PCC II)

> I do breathing, I listen to music, and I've been doing something lately, I'm working with plants. And I like making lunch. I like cooking. (Patient 1, Outpatient)

Religiosity. Participants expressed the importance of their religious beliefs. Their testimonials revealed the perception of religion as a source of support, for self-control, and help with solving problems.

> We went to church very early, so that's where the church supported me so much. (Patient 1, PCC II)

> It is an answer to any problem, everything you imagine, you find in the Bible. It is very up to date. So, I have read the whole Bible more than once, I'm reading it for the fourth time. A person has to read to be able to acquire knowledge to adapt to this life (Patient 1, Outpatient)

> Yesterday I preached in church... for self-control, there is nothing better than reading the Bible, the word of God is a spring in response to all our problems. (Patient 2, Outpatient)

> The reception of the Church was essential. The Church welcomed me. And the Church understands, people today understand, time goes by, you have daily contact, so you have that support. (Patient 1 Family Member, PCC II)

Psychotherapy. Psychotherapy was considered an important therapeutic strategy by patients and health professionals. They perceive psychotherapy as essential for self-knowledge, understanding the disorder, recognizing symptoms, and expressing feelings and emotions.

> Therapy helps when you begin to understand and you become stronger as well. (Patient 1, Outpatient)

> I'm doing individual therapy. It's the day I come and say everything, and I talk, and I talk, because I have to pour everything out, I need to get it all out. (Patient 3, Outpatient)

> About psychotherapy, I think it's very important, especially at the stage of trying to understand a little about your actions and symptoms and understand that the illness is on its way. (Doctor 5, Outpatient)

Physical activity. Participants identified physical activity as a key strategy for both physical well-being and emotional regulation.

> There's a gym near my house. I put it like this: I go because the body asks you to train. I started and loved it. A lot of people go there. I get home feeling more excited; I'm going every week. (Patient 4, Outpatient)

> I go to Zumba classes, then an hour's walk. I listen to music every morning. (Patients 2, PCC III)

> Walking is very good. I think physical exercise is very important in relation to the brain (Patient 3, PCC III)

> Physical activity I find essential. It is very much my repertoire, because it is not even a question of believing, I know the importance of physical activity. (Patient 9, PCC II)

Given the perception of the learning needs related to symptomatology and drug treatment, the participants

indicated the aspects that they considered relevant for symptom control and fostering drug adherence that can be used as adjuncts to health service interventions. These included mood diaries, psychoeducation, and suicide risk reduction.

DISCUSSION AND CONCLUSION

The testimonials revealed the need for both patients and family members to verbalize the impact of the disorder on their lives, their losses, and difficulties, especially at times of crisis, in the manic or depressive phases. They expressed their conflicts/ambivalence about the presence of psychotic symptoms and the need for guidance from health professionals on the symptoms of the disorder. They also mentioned the difficulty of accessing consistent information and the limitations of professional support.

BD patients' perception of the disorder highlights the experience of difficulties at various stages of the illness. These include the characteristics and recognition of the symptomatology, access to information on the disorder, treatment and obtaining professional support. In BD, mood swings in both polarities, manic and depressive, and their heterogeneous symptoms, involving affective, cognitive, and physical changes, make this problem one of the main causes of disability. It has been associated with premature mortality, high levels of functional disability, and lower quality of life (Steardo Jr et al., 2020; Blanco et al., 2017).

In many cases, BD symptoms can result in limitations in the social functioning of individuals and their families. BD can cause emotional changes, such as shame, fear, anger, and sadness, even in family members, discouraging them from seeking help and leading to impairments in work, social and family functioning. Lack of introspection, insomnia, hallucinations, self-harm, and impaired decision-making are all factors that prevent those with BD from taking proper care of themselves (Steardo Jr et al., 2020).

Cognitive impairment, consistently observed in BD, even in remission, is associated with social impairment, worse illness progression, functional impairment, and reduced overall functioning (Demmo et al., 2018). Deficiencies in verbal memory and executive functions also appear to be the strongest predictors of worse psychosocial outcomes and treatment abandonment (Bonnín et al., 2016).

People with BD reported their experiences with episodes of suicidal ideation and suicide attempts. They attributed suicidal behavior to the desire for relief from *"pain in the soul"* and the experience of feeling *"on edge."* Mental health professionals underlined the need for a broad approach to mental disorders and suicide, pointing out the limited dissemination of this theme in health services, including those specializing in mental health.

People with BD are at an extremely high risk of death by suicide, approximately 20 to 30 times that of the general population. Suicide is difficult to predict. However, risk factors such as a history of previous suicide attempts and a family history of suicide attempts or suicide completion, predominant depressive polarity, can be used to assess risk in BD (Miller & Black, 2020). Suicidal behaviors, particularly in BD, are a major public health problem. Preventive strategies require the contextualization of the problem and the design of specific actions at various government levels, with intersectoral collaboration, multidisciplinary approaches, and continuous evaluation and review (World Health Organization, 2012). Knowledge of suicidal behavior is essential for individuals with BD and their families, due to its complexity and recurrence among those with this diagnosis.

In addition to suicidal behavior, financial impulsivity was perceived as having a major impact on the life of patients and their families, due to the financial problems stemming from poorly planned entrepreneurship and uncontrolled spending. Interdiction was suggested as a possible strategy for dealing with debt. A study examining the relationship between financial and psychological variables in BD found that financial difficulties correlated with greater impulsivity, reduced mindfulness, and low self-esteem (Richardson et al., 2019).

The psychosocial disability present in BD, amply described in the reports of the participants in this research, fluctuates according to the severity of the symptoms presented. The support of mental health professionals is crucial to promoting emotional stability and reducing the likelihood of relapse (Hernández-Gómez et al., 2021).

The difficulties of adapting to medication and adverse reactions, the benefits of using it and the difficulty of drug adherence are addressed in the category of perceptions of medication use. Participants discussed the difficulty of tolerating the side effects of the drugs used to treat BD, particularly the inability to express themselves well, weight gain, drowsiness, and muscle stiffening. They highlighted the problem of adapting drug therapy which, for some people, requires constant changes of medication, based on an assessment of their risks and benefits.

Participants were ambivalent about the perception of the benefits of drugs and their suitability and adverse reactions. They emphasized the difficulty of drug adherence due to both intentional and unintentional behavior. Drug adherence is crucial to symptom stabilization in individuals with BD. However, the literature reveals that between 10% and 66% of BD patients fail to take their medication as prescribed (Jawad et al., 2018).

However, there were reports of participants who perceived the benefits of medication, particularly mood stability, and the prevention of relapses, hospitalization, suicidal ideation and psychosis, despite the side effects that occur especially at the onset of treatment. Previous experiences related to crises were cited as a reason for using the medication.

A systematic review of the attitudes of BD patients that influences treatment adherence suggested that these attitudes were based on the perceived advantages and disadvantages of treatment. Many patients regarded treatment as beneficial and necessary even though negative attitudes such as denial, and concerns about the adverse effects of treatment, and stigma were common (Chakrabarti, 2019).

Low medication adherence in BD warrants attention due to its association with increased relapses, suicide and suicide attempts, emergency room visits, hospitalizations, health costs, homelessness, and encounters with the law. Medication nonadherence in BD is harmful for both individuals and society (Inder et al., 2019; Jawad et al., 2018).

Another theme that emerged was perceptions regarding interpersonal relationships. This category encompasses the relationship with health professionals and the family, perceptions of occupational performance, difficulty expressing themselves and adherence to mental health services. The reports showed that the relationship with the health professional is of fundamental importance in that it is a source of information about the illness and its treatment and provides support at times of crisis and relapses. In this context, people with BD expressed their need to feel understood to help them accept the problem, facilitate the treatment process, and prevent relapses and crises. The literature shows that a positive experience with a mental health professional can increase the likelihood of the patient continuing treatment, and prevent the negative consequences of the disorder (Nestsiarovich et al., 2017).

Moreover, an empathetic discussion of the care plan, conveying trust, respect, and willingness to help, especially regarding pharmacological treatment, is essential for establishing a therapeutic relationship between patient and professional (Vallarino et al., 2018).

From the participants' perspective, the family can serve as a collaborator and facilitator when properly informed. A qualitative study of family members of a person with BD observed that relatives face a range of challenges in supporting the person with BD due to the nature of bipolar disorder, the response to family members' attempts to help, and the limitations of professional support. This was accompanied by a feeling of uncertainty, exacerbated by the lack of explanations from health professionals, which corroborates the findings of the present research (Baruch et al., 2018).

Participants in this research reported using non-pharmacological therapeutic strategies to stabilize their mood coupled with medication, with an emphasis on leisure activities, religiosity, psychotherapy, and physical activity.

A systematic review of the literature on the effects of producing art as a therapeutic resource for mental health revealed its beneficial effect on the rehabilitation process. These include the relief of negative feelings, empowerment, and social reintegration, all of which are crucial to the recovery model (Correia & Torrenté, 2016). Strategies such as musical engagement, visual art, movement and dance, drama/theater, and expressive/creative writing have been studied as adjuvant treatments for a variety of psychiatric diagnoses, including BD. They have been shown to reduce illness-specific symptoms and improve mental health, patient satisfaction, and overall well-being (Aalbers et al., 2017; Levine & Land, 2016; Chung & Woods-Giscombe, 2016).

Stroppa et al. (2018) explored the effects of religious activity and coping behaviors on the course of depression, mania, and quality of life (QOL) in people with BD. They found that together with pharmacotherapy, the incorporation of religiosity/spirituality into psychosocial interventions can enhance QOL and improve functioning, increasing the likelihood of better, longer-term recovery.

In this study, psychotherapy was regarded as a key therapeutic strategy for people with BD by patients and health professionals. The literature also points to psychotherapy as a therapeutic modality for stabilizing symptoms and reducing the recurrence of episodes (Miklowitz et al., 2021; Caldiroli et al., 2020).

Physical activity was identified as a useful resource both for promoting physical well-being and for emotional regulation. Research revealed that people with severe mental illness had significantly more sedentary behavior and performed significantly less physical activity than healthy controls (Vancampfort et al., 2017). In this respect, the literature suggests a positive association between self-reported physical activity and cognitive function and mood in patients with severe mental disorders. It indicates that, given the proven benefits and low adverse risk profile, physical activity should be offered as an adjuvant part of mental health treatment (Ashdown-Franks et al., 2019).

Participants in this research cited the use of a mood diary, psychoeducation, and suicide prevention strategies as key resources for symptom control and drug adherence. The literature corroborates this by highlighting the relevance of the daily mood record, since it can indicate early mood changes before the disorder has extreme functional consequences (Mondéjar et al., 2019). The benefits of psychoeducation for those with BD have been amply documented in the literature. Studies suggest that psychoeducation for people with BD reduces the risk of recurrence and hospitalization when implemented in routine clinical practices and contributes to treatment adherence (Joas et al., 2020).

Since suicidal behavior is a public health problem, prevalent among people with BD yet preventible, it must be effectively addressed, as noted by the participants in this study. The literature mentions the provision of psychoeducation for patients, family, and friends as prevention strategies. This enables them to recognize the warning signs of suicidal behavior, while teaching them of the importance of treatment adherence, avoiding isolation, and requesting assistance in emergency situations (Malhi et al., 2018; Dome et al., 2019).

Triangulating the perspectives of the patient, family member and health professional proved helpful. It not only involved the recognition of and dialog between several types of knowledge, but also sharing the limits of pharmacological treatments and the complex, multidimensional nature of mental health issues. The conditions inherent in BD pose a major challenge for patients, their families and health professionals that can only be overcome by working together to find solutions that take users into account.

The results of the study, shared with participants, demonstrated the need for effective interventions in health services designed to control BD symptoms, and ensure proper medication use, suicide and stigma prevention, and family involvement in treatment. Mood diaries, psychoeducation, and suicide prevention are intervention strategies indicated by the participants, and well documented in the literature, which may be useful for clinical practice.

The study had the following limitations, related to the non-generalizability of results, due to their complexity and ambiguity, as well as the influence of the researcher's perspective, assumptions, and values. Nevertheless, it is worth highlighting the innovative aspects derived from the analysis of the triangulation of information from different contexts associated with BD. This provides a better understanding of the needs of both users and their families, allowing for more effective care.

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Conflict of interest

The authors declare they have no conflicts of interest.

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Suicide Risk Assessment of Mexican High School Students: A study based on the ideation-to-action framework

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ABSTRACT

Introduction. Suicide is a leading cause of death among young people globally, and accurately identifying at-risk individuals is crucial for prevention. However, predicting suicide risk remains a significant challenge in suicide research. **Objective.**This study aimed to assess suicide risk among Mexican high school students from San Luis Potosí and Veracruz. **Method.** Suicide risk was defined as previous suicide attempts and current suicidal ideation. To address class imbalance, we applied the Synthetic Minority Oversampling Technique (SMOTE) and evaluated a questionnaire grounded in the ideation-to-action framework. Two machine learning approaches were implemented: a logistic regression model using questionnaire total score (evaluated through ROC curve analysis), and random forest regression analyzing the predictive value of life stressors for the total score. **Results.** A total of 3.4% of 3,456 students were at risk of suicide. The questionnaire showed robust predictive validity, demonstrating excellent discrimination (AUC = .85) and classification accuracy (82%). The random forest model explained 54% of the total score variance, with the most important predictors being stressors related to a reduced sense of connectedness in peer and familial relationships. **Discussion and conclusion.** The questionnaire and previous history of suicide-related behaviors constitute a cost-effective tool for screening for suicide risk in educational settings.

Keywords: Suicide risk, ideation-to-action, machine learning, stressful life events.

RESUMEN

Introducción. El suicidio es una de las principales causas de muerte entre los jóvenes a nivel mundial, donde la identificación precisa de personas en riesgo es crucial para su prevención. Sin embargo, predecir el riesgo de suicidio sigue siendo un desafío en la investigación. **Objetivo.** Este estudio tuvo como objetivo identificar a los individuos en riesgo de suicidio entre estudiantes de preparatoria mexicanos de San Luis Potosí y Veracruz. **Método.** El riesgo suicida se operacionalizó como intentos previos e ideación suicida actual. Para abordar el desequilibrio de clases en la prevalencia del riesgo, aplicamos la Técnica de Sobremuestreo de Minorías Sintéticas (SMOTE) y se evaluó un cuestionario con base en el marco ideación a la acción. Se implementaron dos enfoques de aprendizaje automático: 1) una regresión logística usando la puntuación total del cuestionario (evaluada mediante curva ROC) y 2) una regresión de bosque aleatorio de eventos estresantes de vida para identificar los más importantes en la puntuación total del cuestionario. **Resultados.** De 3,456 estudiantes, 3.4% presentó riesgo de suicidio. El cuestionario mostró una validez predictiva sólida, demostrando una excelente capacidad de discriminación (AUC = .85) y precisión de clasificación (82%). El modelo de bosque aleatorio explicó el 54% de la varianza de la puntuación total, siendo los predictores más importantes eventos estresantes relacionados con un sentido reducido de conexión en las relaciones entre pares y familiares. **Discusión y conclusión.** El cuestionario y los antecedentes de conductas relacionadas con el suicidio constituyen herramientas costo-efectiva para evaluar el riesgo de suicidio en entornos educativos.

Palabras clave: Riesgo de suicidio, ideación a la acción, aprendizaje automático, eventos de vida estresantes.

INTRODUCTION

Suicide is a leading cause of death among young people globally, with particularly high rates in developing countries such as Mexico (World Health Organization [WHO], 2021). Over the past two decades, suicide rates in Mexico have risen steadily, reaching 6.8 cases per 100,000 population in 2023, accounting for 8,837 deaths that year (Instituto Nacional de Estadística y Geografía [INEGI], 2024). For every suicide, there are at least 20 attempts, which translates into approximately 176,000 people attempting suicide in Mexico alone in 2023 (WHO, 2021). These statistics underline the urgent need for effective prevention efforts, yet predicting suicide remains a challenge, as current tools often have limited predictive power (Kreuze & Lamis, 2018).

Suicide is a complex, multifaceted phenomenon that cannot be attributed to a single cause or stressor (Edwards et al., 2023; Mukherjee & Kumar, 2017). Some individuals contemplating suicide do not act on their thoughts, while others may attempt suicide without any prior known history of suicidal ideation (Richardson et al., 2023). This unpredictability has led to the conceptualization of distinct suicidal behaviors, such as suicidal ideation, self-harm, and suicide attempts, which are critical for informing effective prevention strategies. Early intervention is crucial, as once an individual dies by suicide, the opportunity to prevent further harm is lost (Pan American Health Organization [PHAO], 2021).

An individual is considered at risk of suicide when predisposing factors (such as genetic predisposition and personality traits) and precipitating factors (such as hopelessness and lack of social support) align at a critical moment, leading to suicidal ideation or a suicide attempt. Assessing suicide risk is further complicated by the fact that risk factors may vary across the lifespan. Among young adults, mental disorders (Bilsen, 2018; Casas-Muñoz et al., 2024), previous suicide attempts, being female (Su et al., 2020), lack of social support, familial relationship difficulties, and a history of substance use (Hermosillo-de-la-Torre et al., 2020) have been identified as key risk factors.

Suicide risk is traditionally assessed through clinical judgment or risk prediction tools, such as questionnaires. However, these methods often have low positive predictive value (Carter et al., 2017; Steeg et al., 2018). Machine learning approaches, while promising, can be resource-intensive and may require extensive personal data that are not always available (Linthicum et al., 2019). Clinical judgment is often limited by factors such as the patient's denial of suicidal thoughts (Picard & Rosenfeld, 2021), biased questioning (McCabe et al., 2017), and clinician inexperience (Negrão et al., 2024). While we recognize the importance of thorough clinical assessment in evaluating suicide risk and informing decision-making, access to healthcare services remains a significant challenge, particularly in Mexico (Espinola-Nadurille et al., 2010).

Several theoretical models have been proposed to explain suicidal behavior. One prominent approach, known as the ideation-to-action framework, posits that the development of suicidal ideation and the transition from ideation to a suicide attempt are distinct processes. Each of these has its own set of risk factors, protective factors, and prevalence rates. While most known risk factors consistently predict suicidal ideation, research continues to struggle with accurately predicting suicide attempts (Qiu & Klonsky, 2021). According to this framework, factors such as fearlessness about death, emotional pain, distress, access to lethal means, self-inflicted injury, and previous suicide attempts are all linked to suicide risk among ideators (Klonsky et al., 2016).

Building on the ideation-to-action framework, assessment tools could focus on identifying the specific factors that contribute to suicidal ideation and those that facilitate the transition to a suicide attempt. This distinction is crucial, as it allows for a more nuanced understanding of the risk trajectory and the implementation of targeted interventions. For instance, assessing constructs such as acquired capability for suicide, emotional pain, and connectedness may provide a clearer picture of an individual's risk level. By incorporating these elements, screening tools could move beyond a one-size-fits-all approach and offer a more tailored evaluation, improving both their predictive accuracy and clinical utility. This shift has the potential to enhance early identification and enable timely, personalized prevention efforts.

This study aimed to assess suicide risk among Mexican high school students from San Luis Potosí and Veracruz. It evaluated whether a previous history of suicide-related behaviors and stressful life events combined with the Multiphasic Inventory of Suicidal Ideation (IMIS), could serve as a cost-effective approach for suicide risk identification in school populations. This tool, grounded in the ideation-to-action framework, is particularly valuable in resource-limited contexts where there is an urgent need for practical screening tools in educational settings and comprehensive clinical assessment may not be feasible.

METHOD

Study design

This study employed a cross-sectional design to assess suicide risk among Mexican high school students, as measured by previous suicide attempts and current suicidal ideation. Data were collected through an online survey. This included demographic information, a history of suicide related behaviors, suicidal thinking, stressful life events and the Multiphasic Inventory of Suicidal Ideation (IMIS), an innovative screening tool for identifying individuals at risk of suicide.

Participants

This study included 3,481 high school students aged 13-21 (M = 16.28, SD = 1.19) from three public schools across two states in Mexico. One was in Santa María del Río, San Luis Potosí, and two in Veracruz (Poza Rica and Veracruz City). Participants were enrolled in one of two educational modalities: schooled (traditional in-person classroom instruction), or hybrid (weekend classes with flexible scheduling, designed for young working adults who have not yet completed their high school education). Both morning and evening shifts were represented and individuals over 22 were excluded. After removing 25 cases due to missing data or errors, the final dataset comprised 3,456 participants (59.3% female, 40.7% male). Participants over 18 accounted for 2.5% of the total sample (n = 89). Data were collected between 2020 and 2021.

Measurements

Participants completed an online version of the Multiphasic Inventory of Suicidal Ideation (IMIS) assessing nine dimensions (aggressiveness, anxiety, self-esteem, depression, hopelessness, suicidal thinking, family relationships, frustration tolerance, and self-efficacy). Each item is rated on a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The questionnaire also includes 17 dichotomous items on stressful life events, such as pregnancy, homelessness, and parental divorce (Manzano-Delgado & Galan-Cuevas, 2019). The IMIS has excellent internal consistency (ω = .97), and its psychometric properties, including exploratory factor analysis, are detailed in the supplementary material.

Procedure

Data were collected through an online survey, following comprehensive consent procedures. Prior to participation, school authorities organized parent meetings where the study objective was explained in detail. Written informed consent was obtained from parents/legal guardians of all underage students through paper forms signed during these sessions. Students who agreed to participate voluntarily completed the anonymous online survey, which included demographic questions, the IMIS questionnaire, and items concerning stressful life events. Missing age values were imputed using the mean, while cases with missing sex values were removed. The Synthetic Minority Over-Sampling Technique (SMOTE) was applied to address class imbalance in the dataset (Chawla et al., 2002).

Statistical analysis

Data analysis was conducted using R, a programming environment for statistical computing (R Core Team, 2024). A logistic regression model was applied to the SMOTE-balanced dataset to assess the sensitivity and specificity of the IMIS instrument in predicting suicide risk, defined by self-reported previous suicide attempts and current suicidal thoughts. Model performance was evaluated using the area under the curve (AUC). Additionally, a random forest regression model was used to predict the total IMIS score based on stressful life events. The original dataset was split into training (80%, n = 1092) and testing (20%, n = 468) sets, and the model was optimized using 10-fold cross-validation. The model was tuned by varying the number of predictors considered at each split (*mtry*). Performance metrics, including Root Mean Squared Error (*RMSE*), R^2, and Mean Absolute Error (*MAE*), were used to evaluate the model. Preprocessing and data analysis scripts can be found in supplementary materials.

Ethical considerations

This study received ethical approval from the Ethics Committee of the Universidad Autónoma del Estado de Hidalgo (UAEH) following the ethical guidelines for research on human subjects (Approval No. CEEI-000013-2019). For at-risk individuals, we implemented a safety protocol where participants received immediate access to crisis resources via email; parents of children were confidentially notified within 24 hours with referral options; and schools provided support plans. Children's assent was obtained through a two-step process. First, parents/guardians provided written consent (paper forms) after receiving detailed information on the purpose and procedures of the study. Second, students under 18 provided digital assent through an online survey after reading an age-appropriate explanation of the study. This included clear opt-out options at any stage. All data were anonymized and securely stored with access restricted to the research team.

RESULTS

One hundred and twenty (3.4%) of the 3,456 students surveyed were classified as being at risk of suicide (Table 1). An additional 406 students (11.7%) reported suicide ideation without current risk, while 216 (6.2%) reported prior suicide attempts without active suicidal thoughts. Descriptive statistics, stratified by sex and state, revealed significant differences. The proportion of at-risk students varied by state, χ^2 (1, n = 24) = 10.22, p = .001, with Veracruz students exhibiting a higher likelihood of being at risk. No significant sex-based differences were found, though a marginal trend was observed. Additionally, females reported a slightly but statistically higher average number of stressful life events (M = 2.79, SD = 2.25) compared to males (M = 2.54, SD = 2.12), t (3131) = 3.39, p = .001. State-level differences in stressful events were also significant, t (38) = 7.39, p < .001, with Veracruz students reporting higher averages (M = 2.88, SD = 2.21) than those in San Luis Potosí

Table 1
Frequency and distribution of students screening positive for suicide risk, stratified by gender and state

	State					
	San Luis Potosí			Veracruz		
Sex	*n (cases with suicide risk)*	*Total students surveyed (N)*	*% with suicide risk*	*n (cases with suicide risk)*	*Total students surveyed (N)*	% with suicide risk
Male	13	474	2.74	26	934	2.78
Female	11	701	1.57	70	1347	5.20

Note: n represents the number of students who screened positive for suicide risk within each subgroup. Total refers to the overall number of participants surveyed in that subgroup. Percentages reflect the proportion of students with suicide risk relative to the subgroup total.

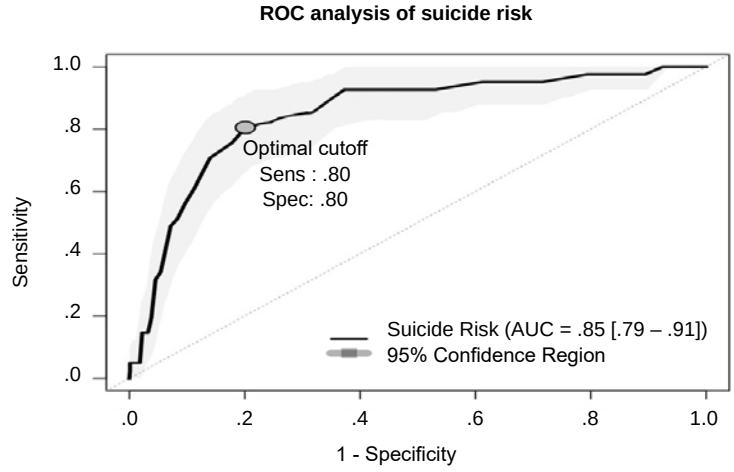


Figure 1. Discriminatory performance of a logistic regression model in assessing suicide risk.
Note: AUC area under the curve. Sensitivity (80.49%) and specificity (79.90%) are depicted at the optimal threshold (.06) using Youden's J Statistic. The area in gray represents confidence intervals at 95%.

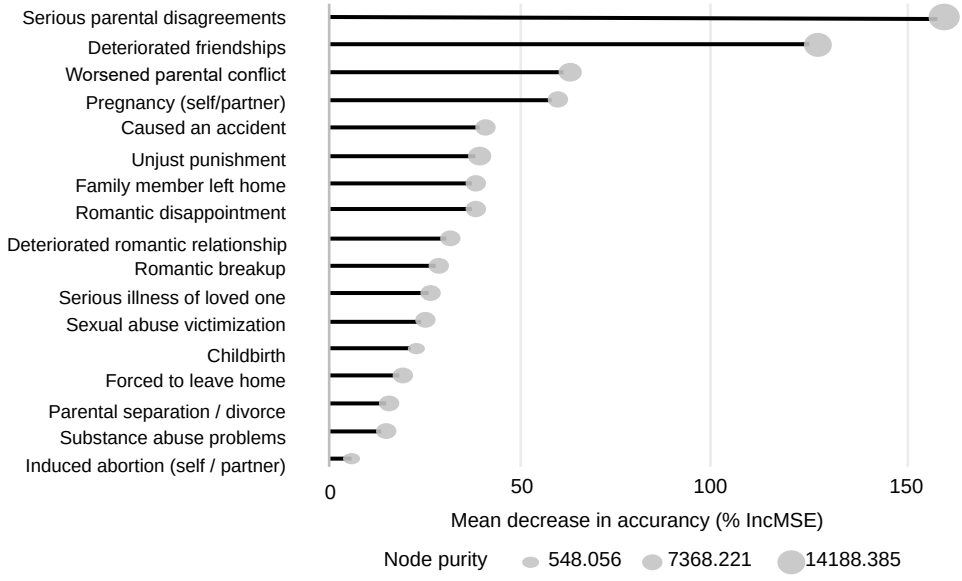


Figure 2. Variable importance of stressful life events in predicting suicide risk (IMIS total score).
Note: Variable importance measures from the Random Forest model predicting suicide risk based on stressful life events Bars represent the mean decrease in model accuracy when each variable is permuted (%IncMSE), while point sizes reflect node purity improvements. The model explained 54.4% of variance (R^2 = .54) with RMSE = 4.97 on the testing dataset. Friendship deterioration. Unfair punishment .Romantic relationship deterioration.

(M = 2.31, SD = 2.12). Finally, a moderate positive correlation was found between the IMIS total score and stressful life events, r = .46, 95% *CI* [.43, .49] p < .001.

A binary logistic regression examined the association between the IMIS total score and suicide risk. The model significantly predicted suicide risk χ^2 (1) = 662.4, p < .001, and explained 34.5% of the variance (R^2 = .3459, Nagelkerke's R^2), correctly classifying 82.3% of the cases. The IMIS total score was statistically significant (B = .256, SE = .013, z = 19.44, p < .001), with an odds ratio of 1.29 (95% *CI* [1.26, 1.33]). This means that for every one-unit increase in the total score, the odds of being classified as high-risk increase by 29%. The performance of the model was evaluated using a Receiver Operating Characteristic (ROC) analysis (see Figure 1). The area under the ROC curve (AUC) was .85 (95% *CI* [.79, .91]), indicating good discrimination between individuals with and without suicide risk. At the optimal threshold (.06), sensitivity was 80.4%, and specificity 79.9%, demonstrating a balanced ability to identify both at-risk and non at-risk individuals.

A Random Forest regression analysis was conducted to predict the IMIS total score based on 17 stressful life events (EV01 to EV17). The optimal model was selected based on the smallest *RMSE*, with *mtry* = 9. During cross-validation, the model achieved an *RMSE* of 4.47, an R^2 of .61, and an *MAE* of 3.27. When applied to the testing set, the model achieved an *RMSE* of 4.97, with a total sum of squares (*SST*) of 25,409.31 and a sum of squared errors (*SSE*) of 11,584.88. The variance explained R^2 for the testing set was .54, indicating that the model explained approximately 54.4% of the variance in the IMIS total score.

Variable importance was assessed using the mean decrease in impurity criterion. The most influential predictor was EV08 ("*I had serious disagreements with my dad/mom or both*"), followed by EV15 ("*Relationships with my friends deteriorated*"), EV05 ("*Fights between my parents got worse*") and EV10 ("*I got pregnant/I got my girlfriend pregnant*)." The importance values are summarized in Figure 2. The mean decrease in node impurity indicated that EV08 contributed the most to reducing overall impurity, with a node purity decrease of 15,178.88.

DISCUSSION AND CONCLUSION

Our study identifies three critical advances in suicide risk assessment among Mexican adolescents. First, the Multiphasic Inventory of Suicidal Ideation (IMIS) demonstrated superior discriminative specificity (AUC = .85) compared to traditional screening tools, which often inflate risk prevalence due to low specificity (Franklin et al., 2017). This aligns with growing concerns about the unintended consequences of over-screening, including unnecessary interventions and resource strain (Gould et al., 2018). Second, we established a suicide risk prevalence of 3.4% (n = 120), attempt rates of 6.2% (n = 216), and ideation rates of 11.7% (n = 406). These are markedly lower than previous Mexican studies reporting 19-38% risk rates using less discriminating instruments (Gómez-Delgado et al., 2024; Maldonado-Arellano et al., 2022). Our estimates closely match gold standard epidemiological data (6.5% attempts; 7.6% ideation; Valdez-Santiago et al., 2023), confirming the clinical utility of the IMIS. Third, the machine learning analysis revealed that interpersonal stressors account for 54% of risk variance, exceeding the predictive value of individual psychological factors. This supports theoretical models (such as Joiner's Interpersonal Theory; and Van Orden et al., 2010) underscoring the need for socially contextualized screening.

The IMIS offers several advantages over widely used tools such as the Electronic Columbia Suicide Severity Rating Scale (eC-SSRS; Greist et al., 2014) and the Patient Health Questionnaire-9 (PHQ-9; Kroenke et al., 2001). First, it is specifically tailored for adolescents without prior depression diagnoses, addressing developmental shifts in suicidality (Nock et al., 2013). Second, it demonstrates optimized psychometric properties: compared to the eC-SSRS, it has higher sensitivity (.80 vs .67) and better specificity than PHQ-9 (.79 vs .66), which is critical for minimizing false positives. Third, it requires no formal training, making it feasible for school-based screenings (Singer et al., 2019). Finally, the multiphasic risk profiling captures psychosocial triggers (such as familial conflict and peer rejection) often overlooked by symptom-focused tools (Foster, 2017).

Consistent with global trends (Bachmann, 2018), our data show elevated risk among female adolescents, likely tied to gender-based violence and maladaptive coping (Patel et al., 2025). Regional disparities (such as higher risk in Veracruz) may reflect socioeconomic inequities due to mental health service gaps (Arteaga-de-Luna & Hermosillo-de-la-Torre, 2022). These findings advocate for intersectional prevention strategies.

Although the IMIS is promising (AUC = .85), its current design lacks dynamic factors (such as acute stressors and protective resilience) that could improve its predictive power. Future iterations should incorporate real-time risk modifiers (such as social media use; Li et al., 2023), test alternative machine learning approaches to handle non-linear interactions (such as neural networks; Linthicum et al. 2019), and expand validations to diverse populations (such as LGBTQ+ youth; Green et al., 2022).

The IMIS has potential as a practical, evidence-based tool for early identification of suicidal risk in adolescents. Its administration in schools and mental health settings could enable timely interventions, ultimately reducing suicide rates. Policymakers and practitioners should prioritize incorporating these tools into prevention programs, particularly in regions with elevated risk, such as Veracruz.

Funding

None

Conflict of interest

The authors declare that they have no conflicts of interest.

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Data availability

The datasets and script analysis for this study are available at: https://github.com/reebravo/imis

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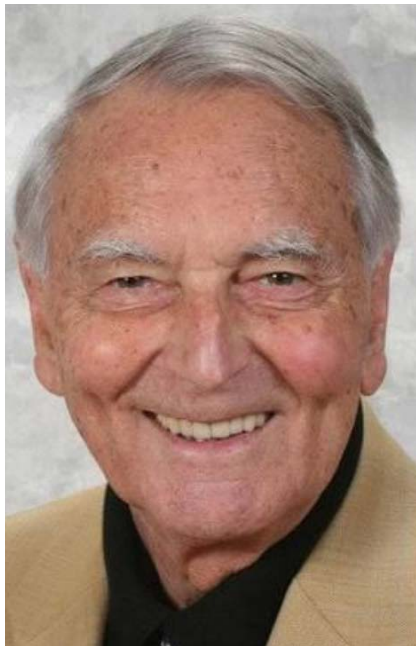
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In Memoriam
Dr. Jules Angst (1926-2026)



Jules has no longer been with us since May 15, 2026.

He passed away shortly before his 100th birthday, accompanied many people living with bipolar disorder throughout their lives through prophylactic treatment lithium carbonate.

We were fortunate to hear his lectures in Mexico, where he was invited by the Ramón de la Fuente National Institute of Psychiatry and the Mexican Psychiatric Association.

He was a great teacher to students and colleagues several generations, who were able to put his knowledge to use for the benefit of patients.

His contributions to epidemiological and clinical research were highly significant, especially his follow-up studies of patients with depression and bipolar disorder treated with lithium salts.

Jules Angst is regarded as one of the most distinguished psychiatrists of the past two centuries for his scientific contributions to the field of affective disorders, their course, and their treatment. These contributions are reflected in his famous long-term study project, which began in the 1970s, and he was always a strong advocate of personalized psychiatry.

Jules, as everyone called him, was always willing to spend time with many generations of students and colleagues, who appreciated his scientific guidance as well as his personal and empathetic companionship.

He will always remain in our memory.

Gerhard Heinze

GUÍA PARA LOS AUTORES

La revista Salud Mental publica artículos originales sobre psiquiatría, psicología, neurociencias y disciplinas afines de acuerdo con los siguientes formatos:

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   Incluye reportes de efectos de un método diagnóstico o terapéutico que sea útil o relevante en el ámbito médico, académico o científico. *Extensión máxima: 2000 palabras.*
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*Nota***:** El conteo de palabras para cada una de estas secciones excluye el título, los resúmenes y las palabras clave, así como los apartados de financiamiento, conflictos de interés y agradecimientos; tampoco se consideran las palabras incluidas en tablas, figuras y referencias.

IDIOMAS
Salud Mental recibe y publica únicamente manuscritos en inglés.

ASPECTOS ÉTICOS EN LA PUBLICACIÓN
Vea los Lineamientos éticos en el sitio web de Salud Mental (revistasaludmental.gob.mx/index.php/salud_mental/).

AUTORÍA
El número de autores dependerá del tipo de manuscrito enviado. Para artículos originales y artículos de revisión el número máximo de autores será de ocho. Solo cuando se trate de estudios multicéntricos el número máximo de autores será de doce, siempre y cuando se justifique de acuerdo con el alcance del estudio.

En caso de autoría colectiva, se incluirá el nombre de los redactores o responsables del trabajo seguido de «*y el grupo...*» cuando todos los miembros del grupo se consideren coautores del trabajo. Si se desea incluir el nombre del grupo, aunque no todos sus miembros sean considerados coautores, se mencionarán a los autores responsables seguido de *«en nombre del grupo...»* o *«por el grupo...»*. En cualquier caso, los nombres e instituciones de los miembros del grupo se incluirán en un anexo al final del manuscrito.

LINEAMIENTOS EDITORIALES
Es muy importante que los autores consideren los siguientes puntos antes de enviar sus manuscritos:

1. Los manuscritos deben redactarse de forma clara y concisa, sin errores de ortografía ni de sintaxis.
2. El texto debe estar escrito en formato Word, en fuente Times New Roman de 12 puntos, a doble espacio, con márgenes de 2.5 cm. y en tamaño carta.
3. Las páginas se numeran consecutivamente, empezando por la página del título y con el número escrito en la esquina superior derecha.
4. La primera página (donde se encuentra el título) debe contener los siguientes apartados en el orden que aquí se menciona:
   - **Título del trabajo en español y en inglés.** El título debe ser descriptivo e indicar los resultados principales del estudio. *Extensión máxima: 25 palabras*
   - **Título corto en español y en inglés.** *Extensión máxima: 6 palabras*.
   - **Nombre completo del autor y de los coautores.** Los autores deberán colocarse en listado; luego, en superíndice, deberá colocarse un número arábigo que indique la institución de adscripción.
   - **Número ORCID de los autores.** Es requisito que cada uno de los autores cuente con su número de identificación ORCID, el cual se puede conseguir en https://orcid.org/register
   - **Adscripción de los autores.** Se debe indicar con números arábigos y en superíndice. Las adscripciones se colocan inmediatamente después de los nombres de los autores (no como notas en pie de página). Es necesario que la adscripción especifique: departamento, área, institución, ciudad y país de cada autor. No es necesario indicar la dirección postal. Las instituciones deben escribirse en su idioma original, sin traducción. Si los autores añaden siglas, éstas deben pertenecer al nombre oficial. No se deben escribir cargos ni grados de los autores (doctor, residente, investigador, etc.).

     Ejemplo:

     Juan José García-Urbina,[1]

     Héctor Valentín Esquivias Zavala[2]

     [1] Dirección de Investigaciones Epidemiológicas y Psicosociales, Instituto Nacional de Psiquiatría Ramón de la Fuente Muñiz, Ciudad de México, México.
     [2] Departamento de Publicaciones, Instituto Nacional de Psiquiatría Ramón de la Fuente Muñiz, Ciudad de México, México.

- Al final de la primera página, en el apartado ***"Correspondencia"***, se proporcionarán los datos de contacto del autor corresponsal (dirección postal completa, teléfono, correo electrónico). Es con quien Salud Mental se comunicará durante todo el proceso editorial.

  Ejemplo:

  Correspondencia:
  Juan José García-Urbina
  Dirección de Investigaciones Epidemiológicas y Psicosociales, Instituto Nacional de Psiquiatría Ramón de la Fuente Muñiz.
  Calz. México-Xochimilco 101, San Lorenzo Huipulco, Tlalpan, 14370, Ciudad de México, México.
  Tel: 55 4152-3624
  E-mail: jurb@imp.edu.mx

5. La segunda página debe contener los resúmenes del trabajo presentado en inglés y español. *Extensión máxima: 250 palabras.*

- ***Artículos originales y Revisiones sistemáticas.*** Los resúmenes deben estar conformados por: Introducción, Objetivo, Método, Resultados y Discusión y conclusión.
- ***Casos Clínicos.*** Los resúmenes deben estar conformados por: Introducción, Objetivo, Principales hallazgos, Intervenciones y resultados y Discusión y conclusión.
- ***Palabras clave.*** Al final de cada resumen se incluirá un mínimo de cuatro y un máximo de seis palabras clave, separadas por comas y en minúsculas. Las palabras clave deben ser las mismas en inglés y en español. Éstas suelen emplearse para la indexación de los artículos, por lo cual tres de ellas deben encontrarse en el MeSH (*Medical Subject Headings*) que se puede consultar en: http://www.nlm.nih.gov/mesh/MBrowser.html.

6. A partir de la tercera página comienza el cuerpo del manuscrito, el cual deberá conservar la estructura señalada en el resumen.

- ***Introducción (o Antecedentes en el caso de las Revisiones narrativas).*** El último párrafo de este apartado debe incluir de forma clara los objetivos del trabajo y, si se cree necesario, las hipótesis.
- ***Método.*** Es preciso que cuente con las siguientes secciones:

  • Diseño del estudio
  • Participantes/descripción de la muestra
  • Sedes
  • Mediciones
  • Procedimientos
  • Análisis estadísticos
  • Lineamientos éticos.

*Nota***:** En caso de los artículos de revisión y casos clínicos, estas secciones pueden ser modificadas de acuerdo con la guía PRISMA (revisiones sistemáticas o la guía CASE REPORT (casos clínicos).

- **Resultados.** Se presentarán en una secuencia lógica dentro del texto. Pueden apoyarse con tablas, gráficas y figuras.
- **Discusión y conclusión.** En esta sección se destacarán los aspectos nuevos e importantes del estudio y las conclusiones que derivan del mismo, así como las posibles implicaciones de sus hallazgos y sus limitaciones.

7. Después del apartado de Discusión y conclusión, es preciso agregar las declaraciones de los autores en el siguiente orden:

- ***Financiamiento.*** En este apartado se debe declarar si el estudio o la preparación del manuscrito recibió algún tipo de financiamiento, indicando el nombre de la entidad que proporcionó los fondos.

  Ejemplo:

  Este estudio fue financiado en parte por el CONSEJO NACIONAL DE CIENCIA Y TECNOLOGÍA. (No. XXXXXXX).

  Si no se recibió ningún apoyo financiero, los autores deben declararlo también.

  Ejemplo:

  Ninguno.

- ***Conflicto de intereses.*** En esta sección, los autores deberán declarar si tienen conflictos de intereses relacionados con su actividad científica. Tener un conflicto de interés no supone necesariamente un impedimento para la publicación del manuscrito. Si no existe conflicto de interés se debe insertar la siguiente frase: *"Los autores declaran no tener algún conflicto de intereses"*.
- ***Agradecimientos.*** Cuando se considere necesario, se mencionarán después de las declaraciones anteriores los agradecimientos a personas, centros o entidades que hayan colaborado o apoyado en la investigación.

8. Referencias. Las referencias se colocan después de las declaraciones del autor (Financiamiento, Conflicto de intereses y Agradecimientos), y ***deben seguir exclusivamente las normas de publicación de la American Psychological Association (APA), en su última edición*** (https://normas-apa.org).

9. Tablas y figuras. Salud Mental establece un máximo de cinco elementos gráficos en total. ***El estándar solicitado para la elaboración de tablas y figuras es el de la American Psychological Association (APA), última edición*** (https://normas-apa.org)***.*** Éstas se colocarán al finaldel manuscrito después de las referencias:

- Las tablas deben contener título y, en la parte inferior, una nota con el desglose de las siglas.
- Las figuras deben enviarse en un formato de alta resolución (mínimo 300 dpi).
- Los títulos de las tablas y los pies de las figuras deben ser claros, breves y llevar siempre el número correspondiente que los identifique. Dentro del texto, el autor debe indicar entre paréntesis y con mayúsculas en qué parte del texto sugiere insertar los elementos gráficos.

  Ejemplo:

  Se cambiaron las definiciones de algunos patrones conductuales (Tabla 3) de manera que fueran más comprensibles en el idioma español y se redefinieron las categorías que agrupan dichos patrones con base en la literatura especializada. (INSERTAR AQUÍ TABLA 3)

ARCHIVOS COMPLEMENTARIOS

1. ***Carta de autorización de uso de la obra*.** Debe estar firmada por todos los autores y enviarse en formato PDF que se puede descargar en https://revistasaludmental.gob.mx/public/Carta-autorizacion-para-publicacion.pdf.
2. ***Carta de presentación.*** El autor debe exponer las fortalezas de su aportación científica, resaltando el alcance, la originalidad y la importancia de su contribución

al campo de la salud mental. *Es de carácter obligatorio mencionar a tres revisores nacionales o internacionales en el campo de conocimiento del manuscrito sometido, favor de indicar el nombre completo y correo electrónico de cada uno de los revisores.* Debe cargarse en formato PDF.

ÉNFASIS Y PUNTUACIÓN

1. Es importante que los manuscritos eviten en general las notas a pie de página, aunque se pueden considerar si son claramente necesarias.
2. Las cursivas deben utilizarse para:
   - Destacar palabras extranjeras.
   - Enfatizar expresiones populares.
   - Mencionar títulos de libros, documentos ya publicados y publicaciones periódicas.
3. Las cursivas pueden emplearse para:
   - Resaltar términos significativos o importantes cuando se mencionan por primera vez.
   - Destacar una palabra u oración dentro de una cita.
4. Las comillas dobles deben usarse solamente para:
   - Citar párrafos de otros autores dentro del texto.
   - Citar textualmente fragmentos del discurso de los sujetos de estudio.
5. Evite el uso de paréntesis doble, es decir, un paréntesis dentro de otro. En su lugar utilice corchetes.
6. Puede emplearse guiones largos para indicar oraciones parentéticas.
7. Deben utilizarse de forma correcta todos los signos de puntuación. Por ejemplo, si emplea signos de interrogación en un texto en español, deben colocarse los de apertura y cierre correspondientes; se procede de igual manera con las comillas.

FÓRMULAS MATEMÁTICAS Y ESTADÍSTICAS

Para presentar los resultados se deben considerar las siguientes indicaciones:

1. Escribir con letra las cifras de cero a nueve y con números las cifras de 10 en adelante.
2. Utilizar números cuando se trate de fechas, muestras, etcétera.
3. Incluir en los datos estadísticos los intervalos de confianza.
4. Los símbolos estadísticos se escriben en cursivas (por ejemplo, *M, SD, n, p)*.
5. Expresar la probabilidad exacta con dos o tres decimales (por ejemplo, p = .04; p = .002) sin el cero adelante del punto decimal. En caso de ser menor a .001 indicarlo con un < .001.
6. Dejar un espacio antes y después de cada signo (a + b = c en lugar de a+b=c).
7. Emplear puntos en lugar de comas para indicar decimales.

VERIFIQUE LO SIGUIENTE ANTES DE SOMETER SU MANUSCRITO

Antes de enviar su manuscrito, cerciórese de adjuntar la documentación solicitada. A los autores, se les devolverá aquellos envíos que no cumplan con los lineamientos editoriales.

1. Manuscrito en formato en WORD.
2. Carta de presentación en formato PDF.
3. Carta de autorización de uso de obra en formato PDF.

GUIDELINES FOR AUTHORS

Salud Mental publishes original articles on psychiatry, psychology, neurosciences and other related fields in the following formats:

1. **Editorials**
   Written at invitation of the Director Editor, editorials express authoritative opinions on specific topics of interest to the scientific community and the area of mental health. They are designed to foster debate and promote new lines of research. *Maximum extension: 1000 words*.

2. **Original articles (peer-reviewed section)**
   These articles present research results unpublished in other journals, and can be written using the following methodologies:

   - *Quantitative methodology.* This methodology includes primary and secondary results from cross-sectional studies, clinical trials, cases and controls, cohorts, and quasi-experimental studies. *Maximum extension: 3500 words*.

     Depending on the type of study, manuscripts should adhere to the following guidelines:

     - Randomized clinical trials should adhere to the *CONSORT guidelines* (http://www.consort-statement.org).
     - Studies with non-experimental designs should adhere to the *TREND guidelines* (https://stacks.cdc.gov/view/cdc/149677).
     - Cross-sectional, cohort, and case-control studies should adhere to the *STROBE guidelines* (http://www.strobe-statement.org).

   - *Qualitative methodology.* This methodology includes focus group reports, in-depth interviews, semantic networks, and content analysis. *Maximum extension: 5000 words*.

     Articles using this type of methodology should comply with the *COREQ guidelines* (https://doi.org/10.1093/intqhc/mzm042).

3. **Review articles (peer-reviewed section)**
   - **Systematic reviews.** These reviews should preferably include a meta-analysis. *Maximum extension: 4000 words*.

4. **Case reports**
   They include reports on the effects of a diagnostic or therapeutic method that is useful or relevant in the medical, academic, or scientific field. *Maximum length: 2000 words.*
   These should comply with the *CASE REPORT guidelines* (https://www.care-statement.org/checklist).

Note. The word count for each of these sections excludes the title, abstracts, and keywords, as well as the funding, conflicts of interest and acknowledgments sections. Words included in tables, figures and references are not considered either.

LANGUAGES

Salud Mental receives and publishes only manuscripts in English.

ETHICAL ASPECTS IN PUBLISHING

See Ethical Guidelines for the journal at https://revistasaludmental.gob.mx/index.php/salud_mental/ethicalguidelines

AUTHORSHIP

The number of authors will depend on the type of manuscript submitted. The maximum number of authors for original or review articles is eight. Only in the case of multicenter studies will the maximum number of authors be increased to twelve, provided this is justified by the scope of the study.

In the event of collective authorship, the name of the editors or those responsible for the article will be included followed by “and the group...” when all members of the group consider themselves co-authors of the work. If the name of the group is to be included, even if not all its members are considered co-authors, the authors responsible will be mentioned followed by “on behalf of the ...group or “by the...group.” In any case, the names and institutions to which members of the group are affiliated should be included in an appendix at the end of the manuscript.

EDITORIAL GUIDELINES

It is of the utmost importance for authors to consider the following before sending their manuscript:

1. Manuscripts should be written clearly and concisely, with no spelling or grammatical errors.
2. The text should be written in Word format, Times New Roman font, size 12, with double-spacing and 2.5 cm margins on letter size sheets.
3. Pages should be numbered consecutively, beginning with the title page, with the number written in the upper right corner.
4. The first page (showing the title) should contain the following sections in the order mentioned here:
   - *Title of article in Spanish and English*. The title should be descriptive and indicate the main results of the study. *Maximum extension: 25 words.*
   - *Short title in Spanish and English*. *Maximum extension: 6 words.*
   - *Full name of author and co-authors*. The authors must be listed and then an Arabic number must be placed in superscript, indicating the institution to which they are affiliated.
   - *Author ORCID number.* It is a requirement that all authors have their ORCID identification number, which can be obtained at https://orcid.org/register
   - *Author affiliation*. This should be indicated with Arabic numerals and in superscript. Affiliations should be placed immediately after authors’ names (not as footnotes). Affiliations should specify the department, area, institution, city, and country of each author. It is not necessary to indicate the postal address. Institutions must be written in their original language, without translation. If the authors add acronyms, these must be included in the official name. No positions or degrees of the authors (such as doctor, resident, or researcher) should be written.

   . For example:

   Juan José García-Urbina,[1] Héctor Valentín Esquivias Zavala[2]

   [1] Dirección de Investigaciones Epidemiológicas y Psicosociales, Instituto Nacional de Psiquiatría Ramón de la Fuente Muñiz, Ciudad de México, México.
   [2] Departamento de Publicaciones, Instituto Nacional de Psiquiatría Ramón de la Fuente Muñiz, Ciudad de México, México.

- The **"Correspondence"** section should be placed at the end of the first page, indicating the corresponding author with their postal address, phone and email address. This will be the only author Salud Mental will contact during the process.

  For example:

  Correspondence:
  Juan José García-Urbina
  Dirección de Investigaciones Epidemiológicas y Psicosociales, Instituto Nacional de Psiquiatría Ramón de la Fuente Muñiz.
  Calz. México-Xochimilco 101, San Lorenzo Huipulco, Tlalpan, 14370, Ciudad de México, México.
  Phone: 55 4152-3624
  E-mail: jurb@imp.edu.mx

5. The second page should contain abstracts of the article in English and Spanish. Each abstract should contain a maximum of 250 words.
   - **Abstracts of original articles and systematic reviews** should comprise the following: Introduction, Objective, Method, Results, and Discussion and Conclusion.
   - **Abstracts of Clinical Cases** should comprise Introduction, Objective, Main findings, Interventions, Results, and Discussion and Conclusion.
   - **Keywords.** At the end of each abstract, a minimum of four and a maximum of six keywords should be included, separated by commas and in lower case. Keywords must be the same in English and Spanish. These are used for indexing articles, which is why three of them must be found in the *MeSH (Medical Subject Headings)* (http://www.nlm.nih.gov/mesh/MBrowser.html).
6. The body of the manuscript begins on the third page, which should follow the structure indicated in the abstract:
   - **Introduction (or Background for Narrative Reviews)**. The last paragraph of this section should clearly include the objectives of the review and, if necessary, the hypotheses.
   - **Method.** This should contain the following sections:
     - Study design
     - Subjects/sample description
     - Sites
     - Measurements
     - Procedure
     - Statistical analysis
     - Ethical considerations

     In the case of review articles and clinical cases, these sections may be modified in keeping with the PRISMA guideline (systematic reviews) or the CASE REPORT guideline (clinical cases).
   - **Results.** These should be presented in a logical sequence within the text. They can be supported with tables, graphs, and figures.
   - **Discussion and Conclusion**. This section will highlight new and relevant aspects of the study and the conclusions derived from it, as well as the possible implications of its findings and its limitations.
7. After the Discussion and Conclusion section, author statements should be added in the following order:
   - **Funding**. In this section, authors should declare whether the study or the preparation of the manuscript received any type of funding, indicating the name of the entity that provided the funds.

     For example:

     This study was partially funded by CONSEJO NACIONAL DE CIENCIA Y TECNOLOGÍA (No. XXXXXXX).

     If no financial support was received, authors must state it was well.

     For example:

     None.
   - **Conflict of interest.** In this section, authors must declare whether they have conflicts of interest related to their scientific activity. Having a conflict of interest will not necessarily prevent publication of the manuscript. If there is no conflict of interest, the following phrase must be inserted: "The authors declare that they have no conflicts of interest."
   - **Acknowledgments**. If deemed necessary, acknowledgment of the people, centers or entities that have collaborated or supported the research will be mentioned after the previous statements.
8. **References.** Are placed after the authors' declarations (Funding, Conflicts of interest, and Acknowledgements), and must adhere to the ***Publication Guidelines of the American Psychological Association (APA), last edition*** (https://normas-apa.org).
9. **Tables and figures.** *Salud Mental* establishes a maximum total of five graphic elements. The standard requested for tables and figures adheres to the ***Guidelines of the American Psychological Association (APA), last edition*** (https://normas-apa.org). These will be placed in the same document as the manuscript after the references.
   - Tables must contain a title and a note with an explanation of the acronyms used at the bottom.
   - Figures must be submitted in a high resolution format (minimum image size 300 dpi).
   - Titles of the tables and figure captions must be clear, brief, and always have an identifying number. Within the text, the author must indicate in parentheses and capital letters where the graphic elements should be inserted.

     For example:

     The definition of some behavioral patterns was changed (Table 3) so that they were more comprehensible in Spanish and the categories that group such patterns were redefined based on specialized literature. (INSERT TABLE 3 HERE)

COMPLEMENTARY FILES

1. **Authorization letter for Publication**. This should be signed by all the authors and submitted in PDF format. Download the form at https://revistasaludmental.gob.mx/public/Authorization-letter-for-publication.pdf.
2. **Cover letter**. The author should describe the strengths of their scientific contribution, highlighting the scope, originality, and importance of their contribution to the field of mental health. *It is mandatory to mention three national or international reviewers in the field of knowledge of the submitted manuscript, please indicate the full name and email address of each of the reviewers.* This must be uploaded in PDF.

EMPHASIS AND PUNCTUATION

1. Manuscripts should generally avoid footnotes, although they may be considered if essential.
2. Italics should be used to:
   - Highlight foreign words
   - Emphasize popular expressions
   - Mention titles of books, published documents and periodicals
3. Italics can be used to:
   - Highlight significant or important terms when they are first mentioned
   - Highlight a word or sentence within a quote
4. Double quotes should only be used for:
   - Citing paragraphs from other authors within the text
   - Quoting verbatim fragments of the study subjects' words
5. Avoid using double parentheses, in other words, one parenthesis inside another, and use square brackets instead.
6. Long dashes can be used to indicate parenthetical sentences.
7. All punctuation marks must be used correctly. For example, if question marks are used in a Spanish text, the corresponding opening and closing signs must be included together with quotation marks.

MATHEMATICAL AND STATISTICAL FORMULAE

The following points must be considered when results are presented:

1. Write figures from zero to nine in letters and use numbers for figures from 10 onwards.
2. Use numbers with dates and samples, etc.
3. Include confidence intervals in statistical data.
4. Statistical symbols are written in italics (M, SD).
5. Express exact probability to two or three decimal places (for example, $p = 0.04$; $p = 0.002$), *with no zero in front of the decimal point.* If it is less than .001, it should be written as follows < 0.001.
6. Leave a space before and after each sign (a + b = c instead of a+b=c).
7. Use periods instead of commas to indicate decimals.

PLEASE CHECK THE FOLLOWING BEFORE SUBMITTING YOUR MANUSCRIPT

Before submitting your manuscript, be sure to attach the requested documentation. Submissions failing to comply with the editorial guidelines will be returned to authors.

1. Manuscript in WORD format
2. Cover letter in PDF format
3. Letter authorizing the use of the article